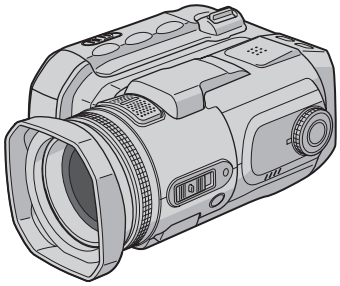
JVC

SERVICE MANUAL

DIGITAL MEDIA CAMERA

GZ-MC500AA, GZ-MC500AC, GZ-MC500AG, GZ-MC500AH, GZ-MC500EK, GZ-MC500EX, GZ-MC500EY, GZ-MC500EZ



GZ-MC500AA, GZ-MC500AC, GZ-MC500AG, GZ-MC500AH,
GZ-MC500EK, GZ-MC500EX, GZ-MC500EY, GZ-MC500EZ [M5S727]

Lead free solder used in the board (material : Sn-Ag-Cu, melting point : 220 Centigrade)

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No.YF101
2005/8

SPECIFICATION

■Camcorder

For General	Power supply		DC 11.0 V(Using AC Adapter) DC 7.2 V (Using battery pack)
	Power consumption		Approx. 5.5 W Approx. 8.0 W (Maximum; when charging a battery)
	Dimensions (W × H × D)		80 mm × 55 mm × 118 mm (incl. lens hood)
	Weight		Approx. 330g (without battery, removable hard disk, lens hood,lens cap and strap) Approx. 400g (incl. battery, removable hard disk, lens hood,lens cap and strap)
	Operating temperature		0°C to 40°C
	Operating humidity		35% to 80%
	Storage temperature		-20°C to 50°C
	Pickup		1/4.5"(1,330,000 pixels) CCD × 3(3CCD)
	Lens	Video	F 1.8 to 2.4, f = 3.2 mm to 32 mm, 10:1 power zoom lens
		Still	F 1.9 to 2.4, f = 4.0 mm to 32 mm, 8:1 power zoom lens
	Filter diameter		Ø37 mm
	LCD monitor		1.8" diagonally measured, LCD panel/TFT active matrix system
	Speaker		Monaural
	Flash		Within 2 m (recommended shooting distance)
For Video/ Audio	Format		SD-VIDEO
	Recording/Playback format	Video	MPEG-2
		Audio	Dolby Digital (2 ch)
	Signal format		PAL standard
	Recording mode	Video	ULTRA FINE: 720 × 576 pixels, 8.5 Mbps (CBR) FINE: 720 × 576 pixels, 5.5 Mbps (CBR) NORMAL: 720 × 4576 pixels, 4.2 Mbps (VBR) ECONOMY: 352 × 288 pixels, 1.5 Mbps (VBR)
		Audio	ULTRA FINE: 48 kHz, 384 kbps FINE: 48 kHz, 384 kbps NORMAL: 48 kHz, 256 kbps ECONOMY: 48 kHz, 128 kbps
For Still image	Format		JPEG
	Image size		5 modes (2560 ×1920 pixels/2048×1536pixels/1600 × 1200 pixels/1280 × 960 pixels/640 × 480 pixels)
	Picture quality		2 modes (FINE/STANDARD)
For Voice	Format		Linear PCM
	Recording mode		FINE: 48 kHz, 1,536 kbps, 16 bit, stereo STANDARD: 16 kHz, 512 kbps, 16 bit, stereo ECONOMY: 8 kHz, 256 kbps, 16 bit, stereo
For Connectors	AV	S-Video output	Y:1.0 V (p-p), 75Ω, analogue, C:0.29V (p-p), 75Ω, analogue
		Video output	1.0 V (p-p), 75Ω, analogue
		Audio output	300 mV (rms), 1 kΩ, analogue, stereo
	Headphone	output	Ø2.5 mm, stereo
	USB		Mini USB-B type, USB 1.1/2.0 compliant

■AC Adapter

Power requirement	AC 110 V to 240 V, 50 Hz/60 Hz
Output	DC 11 V, 1 A

Design and specifications subject to change without notice.

SECTION 1
PRECAUTIONS

1.1 SAFTY PRECAUTIONS

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold.However,in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

1.1.1 Precautions during Servicing

(1) Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product.When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

(2) Parts identified by the ⚠symbol and shaded ( ) parts are critical for safety.
Replace only with specified part numbers.

NOTE :
Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

(3) Fuse replacement caution notice.
Caution for continued protection against fire hazard.
Replace only with same type and rated fuse(s) as specified.

(4) Use specified internal wiring. Note especially:
- Wires covered with PVC tubing
- Double insulated wires
- High voltage leads

(5) Use specified insulating materials for hazardous live parts. Note especially:
- Insulation Tape
- PVC tubing
- Spacers
- Insulation sheets for transistors
- Barrier

(6) When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

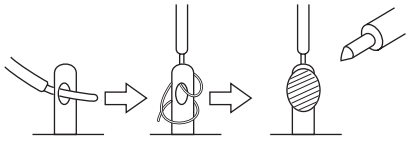


Fig.1-1-1

(7) Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

(8) Check that replaced wires do not contact sharp edged or pointed parts.

(9) When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

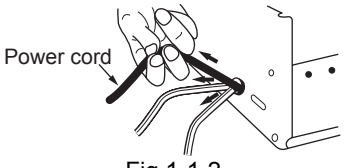


Fig.1-1-2

(10) Also check areas surrounding repaired locations.

(11) Products using cathode ray tubes (CRTs)In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits.Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

(12) Crimp type wire connectorIn such cases as when replacing the power transformer in sets where the connections between the power cord and power trans former primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
- **Connector part number** :E03830-001
- **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
- **Replacement procedure**
  a) Remove the old connector by cutting the wires at a point close to the connector.Important : Do not reuse a connector (discard it).

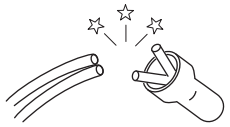


Fig.1-1-3

b) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

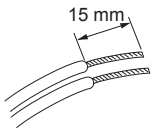


Fig.1-1-4

c) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

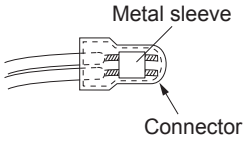


Fig.1-1-5

d) As shown in Fig.1-1-6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

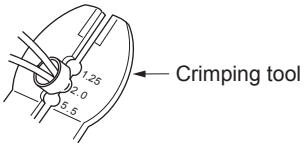


Fig.1-1-6

e) Check the four points noted in Fig.1-1-7.

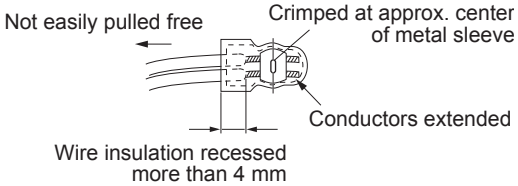

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.1-1-7

1.1.2 Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

(1) Insulation resistance test
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).See table 1 below.

(2) Dielectric strength test
Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See Fig.1-1-11 below.

(3) Clearance distance
When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See Fig.1-1-11 below.

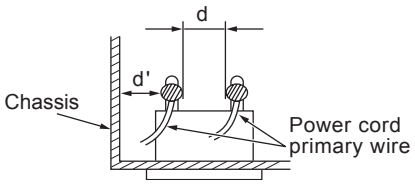


Fig.1-1-8

(4) Leakage current test
Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
Measuring Method : (Power ON)Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig.1-1-9 and following Fig.1-1-12.

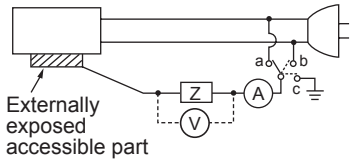
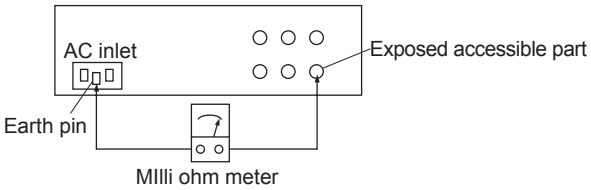


Fig.1-1-9

(5) Grounding (Class 1 model only)
Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).Measuring Method:
Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See Fig.1-1-10 and grounding specifications.



Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

Fig.1-1-10

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦R≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Fig.1-1-11

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Fig.1-1-12

NOTE :

These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 Provided applications

GZ-MC100, GZ-MC200 and GZ-MC500 come with the following four types of software.

(1) Digital Photo Navigator
(2) PowerDirector
(3) PowerProducer
(4) PowerDVD

(1) is JVC's original and it is the same product as the one used in DVC.
(2),(3), and 4. are commercial software from CyberLink Inc. They were functionally modified for GZ-MC100/200/500.
As not only functional deletion but also functional addition for EVERIO were carried out in the provided software, it is required to use the provided EVERIO exclusive software.

(1) Digital Photo Navigator 1.0

It is software that creates albums by collecting still pictures. There are no commercial products or enhanced versions.

(2) PowerDirector Express NE (PowerDirector)

It is software that edits and processes the video taken with EVERIO.
Ordinary editing features can be applied frame by frame: cutting unwanted parts, editing transition flow, and title lettering.
In addition, saving the editing as a file of .mod enables playback with EVERIO.
Although there are authoring function and write-in function in commercial PowerDirector3 from CyberLink Inc., provided software does not include these functions.
Some functions are removed from commercial products when producing EVERIO exclusive PowerDirector.
Although a commercial product seems to be used with EVERIO as a replacement for a provided product, the video that is taken with EVERIO cannot be seen as the commercial products cannot deal the file extension ".MOD".There is no performance assurance even if playback is available by changing the extension.
In many cases, import errors, hang-ups, freeze in mid-flow, dropping frames or bad quality in video playback will occur.

Product Name	PowerDirector 3	PowerDirector,Express NE
	Commercial Product	EVERIO Bundled Product
Input file (Video)	MPEG-1,MPEG-2,DAT,AVI,DivX, Vob,VRO,WMV,MOV	MPEG-1,MPEG-2,DAT,AVI,Vob,VRO,WMV
Input file（Still pictures）	GIF,BMP,JPG,TIF	BMP,JPG
Input file（Audio）	WAV,MP3,WMA	WAV,MP3,WMA
Audio recording function	Microphone,Music CD	Microphone
Output file (Video)	MPEG-1,MPEG-2,DV-AVI,DivX, WMV,RealVideo,Quicktime	MPEG-1,MPEG-2,DV-AVI,WMV,RealVideo
Output in EVERIO video format	—	○
DV Capture support	○	○
DV real time capture	○	○
Rewrite to DV tape	○	○
DV Quick Scan	○	—
DivX Support (DivX codec)	○	Separate installation is required
Color Board	○	○
Scene Detection	○	○
Trim Mode, Separation Mode	○	○
Precise-Cut	○	—
Screen Capture	○	—
Title Designer	○	○(Partially limited)
Motion Titles	○(53)	○(Partially limited)
PiP (Picture in Picture)	○	—
Transitional Effects	○(111)	○(60)
DVD Authoring Program	○	Supported by PowerProducer 2 Gold NE

(3) PowerProducer

It is software which authors or writes-in the files that were edited and processed with PowerDirector to media such as DVD and DVD-R.

The functional difference between the commercial products and provided EVERIO exclusive products both from CyberLink inc. are only additional audio editing and BGM function in the menu.It cannot import the ".MOD" file extension.

Product Name	PowerProducer 2,Gold	PowerProducer 2,Gold NE
	Commercial Product	EVERIO Bundled Product
Creatable discs	DVD-Video,VCD,SVCD,DVD±VR	DVD-Video,VCD,SVCD,DVD±VR
DVD-RAM write- in	○	○
Right-to-Disc	○	○
Playlist Authoring	○	○
Conversion from -VR to Video format	○	○
+VR disc de-fragmentation	○	○
BGM in the Menu	○	—
Motion Menus	○	○
AB Cut (Easy cut editing)	○	○
Disc copying	○	○
EVERIO Specialized Profile	—	4 Types of Profiles for EVERIO Recording Mode

(4) PowerDVD

It is software which plays back media such as DVD-R that was wrote-in by PowerDirector.

As this software supports .mod files, the video that was taken with EVERIO can be played back with a PC without processing.However, commercial products and PC bundled PowerDVD cannot playback the EVERIO video as shown in the below table.

If a PC which has already been installed with PowerDVD is used, we recommend to un-install the original PowerDVD first, then install provided PowerDVD.

In addition, it is reported that PowerDVD6 (the next version to come) will have additional .mod playback function.

Product Name	PowerDVD 5,Deluxe	PowerDVD 5	PowerDVD 5 NE
	Commercial Product	Commercial Product	EVERIO Bundled Product
Audio decoder channels	8	6	2
Audio output channels	8	6	2
Dolby head phones	○	—	—
Dolby virtual speakers	○	—	—
dts® decode	○	—	—
SRS TruSurround XT™	○	—	—
CLMEI	○	○	—
CLHP	○	○	—
DivX file playback	○	○	—
Mod video file playback	—	—	○

2.2 Recording media

CompactFlash cards, 1-inch hard disk drives such as Microdrives, or SD Memory Cards can be used as recording media for EVERIO. (MMC cards cannot be used.)

There are two types of CompactFlash cards in different thickness. Ordinary CompactFlash cards are Type I (36.4×42.8×3.3mm), and Microdrives etc. are Type II (36.4×42.8×5.0mm).

Although the thickness is different, the standards, which include the terminal alignments, are exactly the same.

There are CF standard and CF+ standard in the CompactFlash card standards.

The CF standard is compact and Flash ATA Card compatible recording media (memory card) developed by SanDisk Corporation. As technical innovation requires new standard that supports the products with faster transfer speed, the new CF+ standard arrived in June 2003. The CF+ standard has an increase in transfer speed from existing 8MB/sec to 16MB/sec while maintaining the compatibility with the existing systems.

The CF standard is developed envisioning only media that use semiconductor (memory) to support, thus the same hard disk forms such as Microdrives are not taken into account.

The major difference between memories and hard disks is that hard disks consume more electricity as they need to drive the motors. As a result, new standard with changed electricity consumption standard was required.

For details of the CF standard, please refer to the following web site.

http://www.compactflash.org

Basically, recording media that comply with this CF+(Type II) standard may be used with EVERIO.
However, performance assurance is given to the CF+(Type II) standard with specified Microdrive name by Hitachi, IBM, and other makes that are OEM supplied by those two companies.
To compare with currently distributed IBM's CF+ standard 2GB and 4GB models, CF standard 340Mb and 1GB models are slow in transfer speed. As a result, when recording movies, there may be possibilities of failures in recording or replaying as the Microdrives cannot follow the speed of EVERIO itself. It is remarkably affected when shooting movies in high-quality mode.
In this case, "This card is not for recording video." is displayed. Even with a Microdrive name, without the CF+ standard, performance assurance cannot be given.
Currently, there are two companies that supply Microdrive CF+ (Type II) small hard disks besides Hitachi and IBM. Their web sites are shown below for your reference. (There is no performance assurance for their products.)
GS magicstor Inc.http://www.gs-magicstor.com/ It is a Chinese company.
Seagate Technologyhttp://www.seagate.com/It is an American company.

2.3 3CCD System

There are two types in color CCD system: 1CCD system in which color images are created with one CCD chip, and 3CCD system which uses three CCD chips to create color images.
In 3CCD system, an image (optical signal) which has been captured by the lens is separated into three primary colors: Red, Green, and Blue by color separation prisms before being converted to picture signals by each CCD. As a result, the color presentation is considerably improved and high resolution is achieved. However, 3CCD has only been used in professional video cameras as the color separation prisms are expensive and a unit of three CCDs leads to large camera size.
JVC's 3CCD system in professional cameras uses dichroic prisms as color separation prisms. The incident light is separated by dichroic prisms into each wavelength of RGB, then the light is received by separate CCDs. The phase in which the Blue wavelength enters the CCD through the prism is air-gapped to reflect in the same even phase as the Red and Green wavelengths.
The merits of 3CCD system include: full utilization of high resolution by using corresponding CCD to each wavelength of RGB, and high color reproducibility and good image quality owing to optimum image output from each chip.
On the other hand, the demerits of 3CCD system are (as previously mentioned): difficulties in controlling air-gap due to the dichroic prism structure, the large camera size due to the complicated light paths, and the high price due to control and production costs.

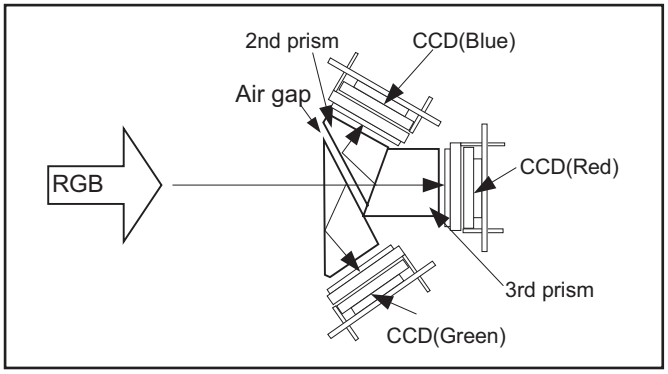


Fig.2-6-1
Light paths of professional 3CCD dichroic prisms

A new type of prism has been developed to introduce small-sized and lowered cost optical prisms for consumer products while utilizing the high resolution, high color reproducibility, and good picture quality of 3CCD.

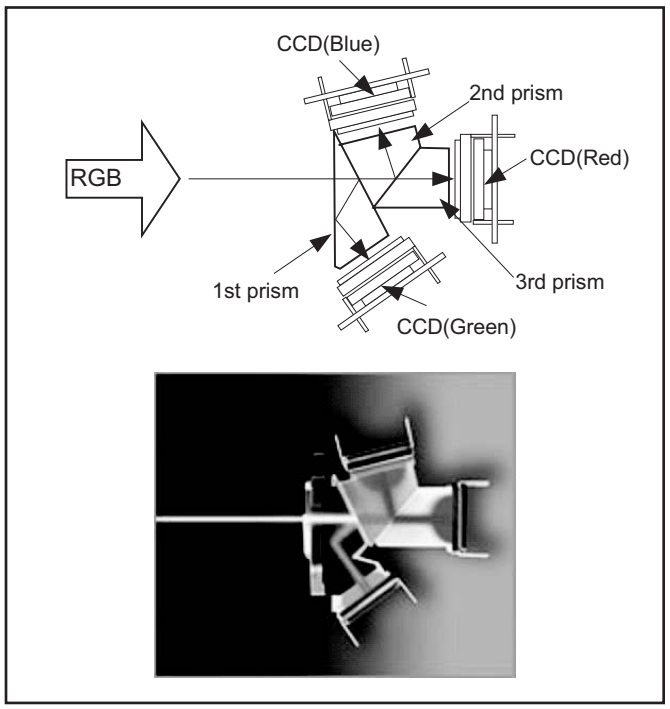


Fig.2-6-2
3CCD for consumer products

As shown in the Fig. 2-6-2 the Blue wavelength is captured in the CCD as an odd phase. The production management cost can be reduced by electrically antiphasing the captured signal without the need for either optical prisms or air-gap.
In an ordinary 3CCD camera, the CCDs are fixed to the color separation prisms. This requires enough mechanical strength of the adhesion layer to keep the CCDs stable against vibrations or shocks. Preventing registration differences caused by the temperature change is also required. The positioning with high accuracy is needed as the CCD registration depends on the affixing accuracy.
Video cameras from other manufacturers use the system in which the CCDs are directly affixed to the prisms. JVC adopts the professional camera's proven system in which a wedge glass is sandwiched between a CCD and a prism.
The Blue channel and the Red channel of a 3CCD camera are fixed half a pixel horizontally displaced against the Green channel CCD. When the pixels are displaced, the resolution seems to be improved. Casting a color separation prism and a CCD as one unit enables miniaturization of the prisms and the CCDs.
If there are symptoms such as edge coloring as a result of the above displacement of Green pixels, defects in optical prism itself may occur.
In this case, the optical prism unit must be replaced.

2.3.1 Megapixel Still Picture Recording

In the new technology, 5 Megapixel still picture recording is achieved with pixel interpolation. It is a technology which makes the resolution 1.4 times higher, and the CCD pixel numbers 4 times more with pixel shift method: aligning the Green pixel CCD half a pixel displaced.

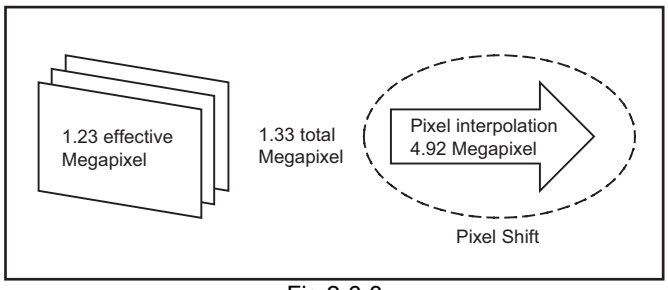


Fig.2-6-3

Fig. 2-6-4 shows a basic pixel pattern of 3CCD system. There are 1.23 effective Megapixel (1.33 total Megapixel) for each CCD for separate RGB. If a still picture image is captured, the total pixel numbers are 3.99 Megapixel which is three times 1.33 Megapixel.

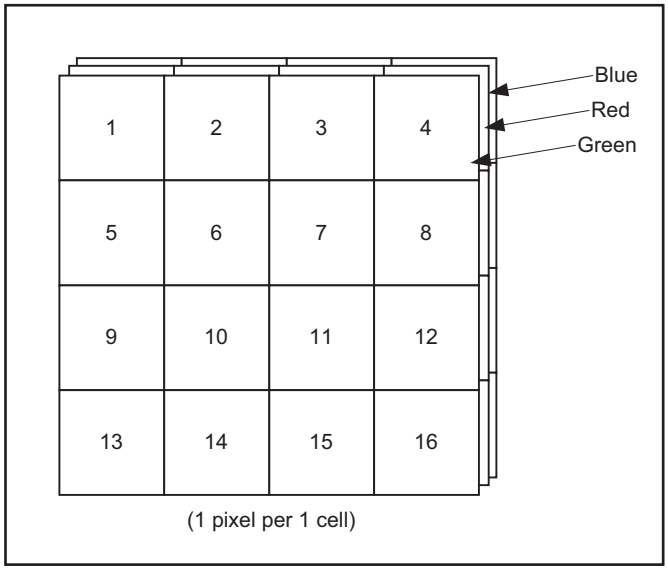


Fig.2-6-4
Basic pixel pattern of 3CCD system

When initially mentioned pixel interpolation: a distinctive technology of 3CCD "pixel shift (half a pixel displacement)" is adopted, 5 Megapixel still picture recording of 2560x1920 dot is achieved although the effective pixel for each CCD is 1.23 Megapixel.

Pixel shift is also called pixel displacement, a technology mainly used with 3CCD. In this technology, only the Green CCD which is responsible for the luminance signal is physically displaced slightly in half a pixel.

When the Green (G) is diagonally displaced to the lower right direction, the RGB can exist in the proportion of 1:1/4:1 instead of 1:1:1 at the position of 1/4 in the upper left of the Green (e.g. G1).

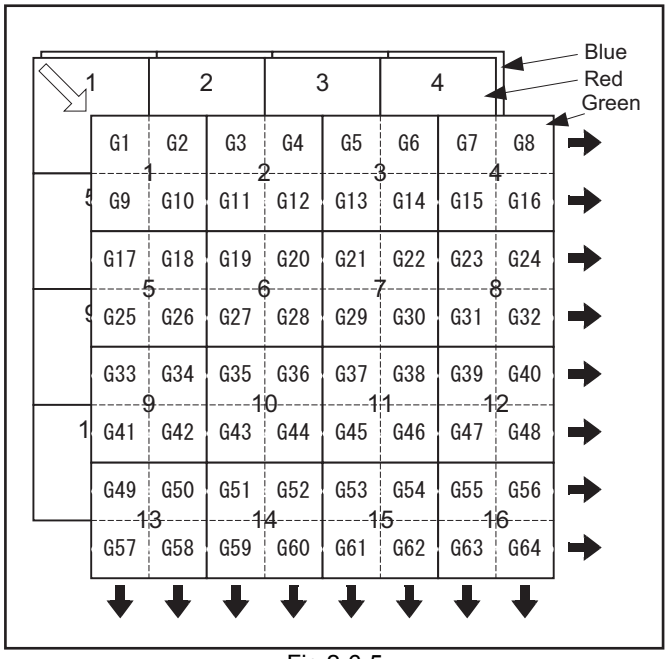


Fig.2-6-5
Pixel shift in 3CCD system

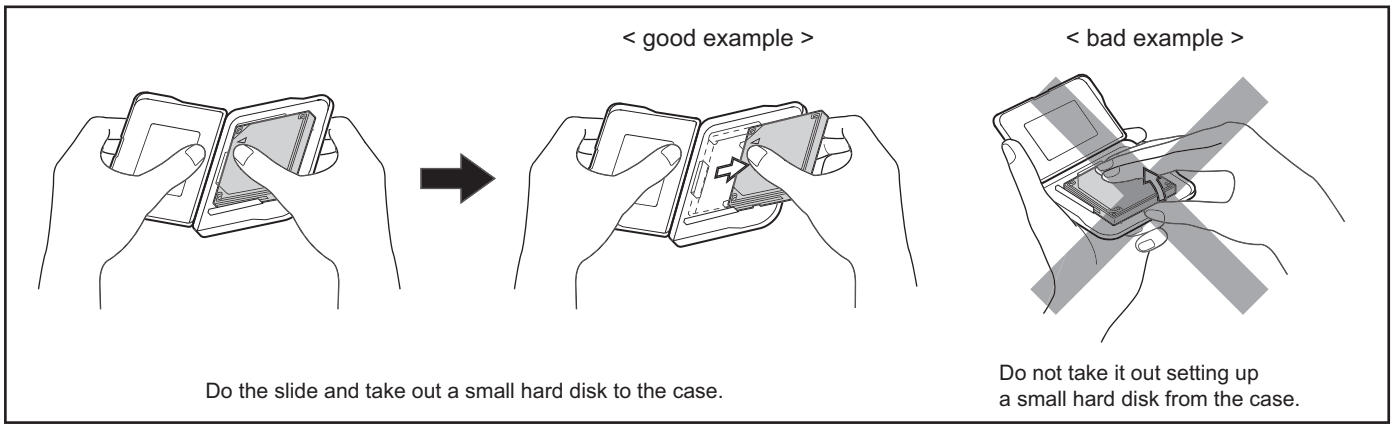
When the RGB exists while the size of the Green pixel is 1/4 of other pixels, the total recording pixels seen from the Green pixel is 4 times more (2 × horizontally, 2 × vertically). Resolution is increased to enable 4.92 Megapixel (1.23 Megapixel × 2 × 2) still picture recording.

That is why still pictures can be taken in 5Megapixel quality although the CCDs have VGA class pixels.

2.4 Handling Microdrives

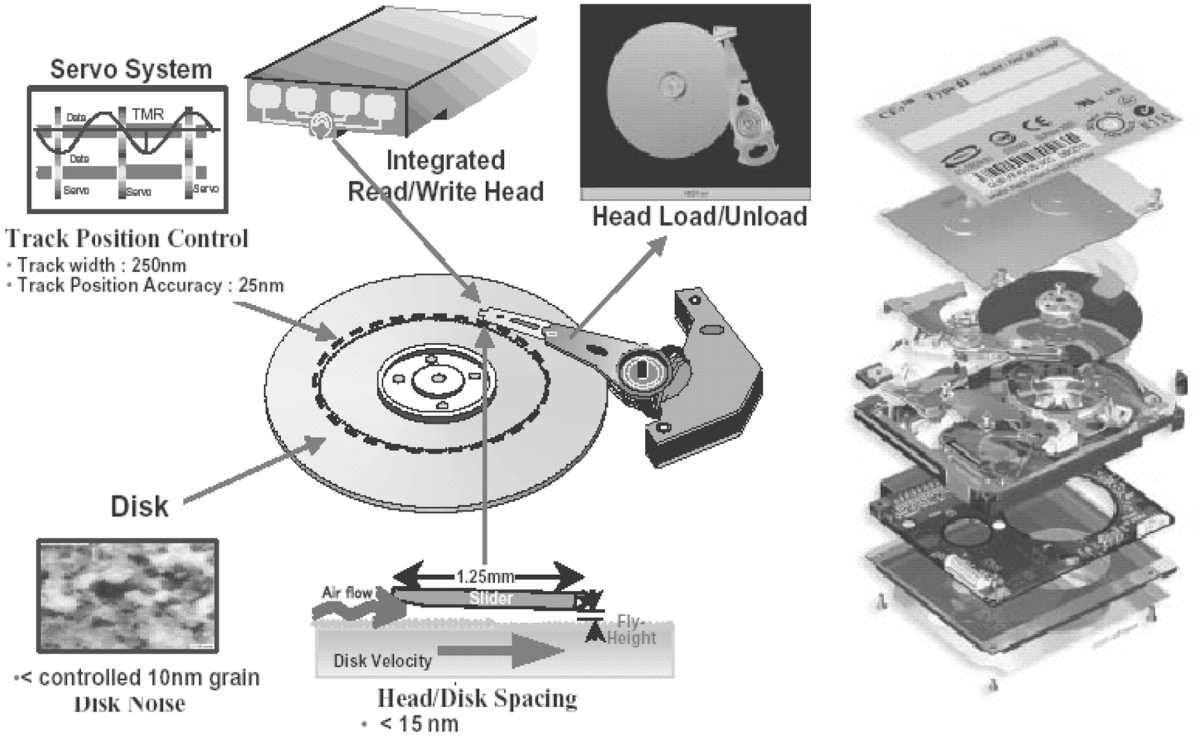
Microdrives are used in GZ-MC100, GZ-MC200 and GZ-MC500. Although the appearance is different, a Microdrive is exactly the same as a hard disc that is used in a PC. Therefore, unlike handling conventional tapes, caution must be paid in handling Microdrives. The handling of Microdrives is explained in this section.

2.4.1 Removable Hard Disk



2.4.2 The structure of Microdrives

The detailed inside structure of Microdrives is not disclosed as it is treated as trade secrets. However, it is essential to have knowledge of the structure of Microdrives in order to carry out service properly. Some information about Microdrives is given here.



A Microdrive is mainly consisted of the following parts.

- A magnetic recording disk that is coated with magnetic material. (Disk)
- A reading/ writing head. (Head)
- A motor that turns the disk.
- A circuit board that is loaded with electrical circuit which controls the motor, the head positioning, and input/ output of the signal.

1 head type Microdrives use one side of the disk, and 2 head type Microdrives use both sides of the disk with heads on each side of the disk.The disk and the head do not contact and there is certain space kept between them. The head reads the pre recorded servo information to control the head itself. When the head is not in access to the disk, it is kept in a shelter to avoid damaging the disk with shocks from outside.

The difference between a 2GB Microdrive and a 4GB Microdrive is only whether it has one head or two heads and there is no difference in performance, as shown in the specification list. A 2.5 inch hard disk that is used in a note PC is shown as a reference. As a 2.5 inch hard disk is bigger than a Microdrive, it has more disks and heads resulting in more capacity. 6GB type Microdrive has been lately released. To compare the existing 4GB Microdrive with the newly released 4GB and 6GB Microdrives, most of the specifications are the same. However, obviously the data transfer speed and the areal density have been improved. On the contrary, it seems impossible to increase the disks for a Microdrive because of size restriction. High capacity will be achieved by improving the areal density, transfer speed and rotation speed of the future products.

	Microdrive		hard disk
	2GB	4GB	80GB
Model name	Microdrive 3K4-2	Microdrive 3K4-4	Travelstar 4K80-80
Model number	HMS360402D5CF00	HMS360404D5CF00	HTS428080F9AT00
Capacity	2 GB	4 GB	80 GB
Interface	CompactFlash Type Ⅱ	CompactFlash Type Ⅱ	ATA ATA-6
Form factor	1inch	1inch	2.5inch
System type	Consumer electronics	Consumer electronics	Laptop
Cache buffer	128 KB	128 KB	8 MB
Disks / Heads	1/1	1/2	2/4
Rotational speed (RPM)	3,600 (RPM)	3,600 (RPM)	4,200 (RPM)
Media transfer rate	97.9 Mb/sec max	97.9 Mb/sec max	351 Mb/sec max
Interface transfer rate	33 MB/sec max	33 MB/sec max	100 MB/sec max
Average seek (ms)	12 (ms)	12 (ms)	13 (ms)
Average latency (ms)	8.33 (ms)	8.33 (ms)	7.1 (ms)
Areal density	56.5 Gb/sq. inch	56.5 Gb/sq. inch	68.5 Gb/sq. inch
Typical idle acoustic (Bels)	—	—	2.4B
Operating shock (G)	200 G (2ms)	200 G (2ms)	250 (2ms)
Non-operating shock (G)	2000 G (1ms)	2000 G (1ms)	800 (1ms)
Operating ambient temperature (℃)	0 ～ 70 (℃)	0 ～ 70 (℃)	5 ～ 55 (℃)
Non-operating ambient temperature (℃)	-40 ～ 70 (℃)	-40 ～ 70 (℃)	-40 ～ 70 (℃)

		Microdrive	
	4GB(Old goods)	4GB(New case goods)	6GB
Model name	Microdrive 3K4-4	Microdrive 3K6-4	Microdrive 3K6-4
Model number	HMS360404D5CF00	HMS360604D5CF00	HMS360606D5CF00
Capacity	4 GB	4 GB	6 GB
Interface	CompactFlash Type Ⅱ	CompactFlash Type Ⅱ	CompactFlash Type
Form factor	1inch	1inch	1inch
System type	Consumer electronics	Consumer electronics	Consumer electronics
Cache buffer	128 KB	128 KB	128 KB
Disks / Heads	1/1	1/2	1/2
Rotational speed (RPM)	3,600 (RPM)	3,600 (RPM)	3,600 (RPM)
Media transfer rate	97.9 Mb/sec max	125 Mb/sec max	125 Mb/sec max
Interface transfer rate	33 MB/sec max	33 MB/sec max	33 MB/sec max
Average seek (ms)	12 (ms)	12 (ms)	12 (ms)
Average latency (ms)	8.33 (ms)	8.33 (ms)	8.33 (ms)
Areal density	56.5 Gb/sq. inch	78 Gb/sq. inch	78 Gb/sq. inch
Typical idle acoustic (Bels)	—	—	—
Operating shock (G)	200 G (2ms)	200 G (2ms)	200 G (2ms)
Non-operating shock (G)	2000 G (1ms)	2000 G (1ms)	2000 G (1ms)
Operating ambient temperature (℃)	0 ～ 70 (℃)	0 ～ 70 (℃)	0 ～ 70 (℃)
Non-operating ambient temperature (℃)	-40 ～ 70 (℃)	-40 ～ 70 (℃)	-40 ～ 70 (℃)

2.4.3 Precautions on handling Microdrives

Main causes of failures in hard disks including Microdrives are listed as follows.

(1) Failures caused by shocks
(2) Failures caused by static electricity
(3) Failures caused by power cut during the operation

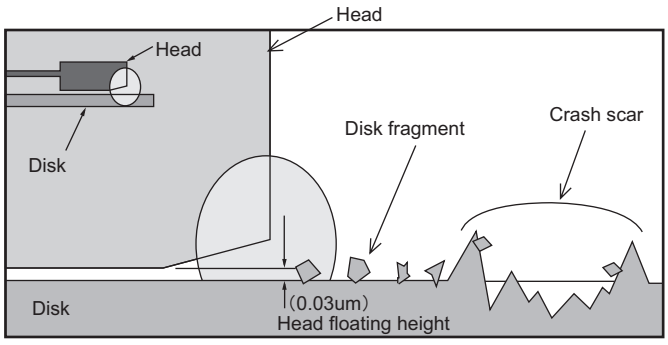
2.4.3.1 Failures caused by shock

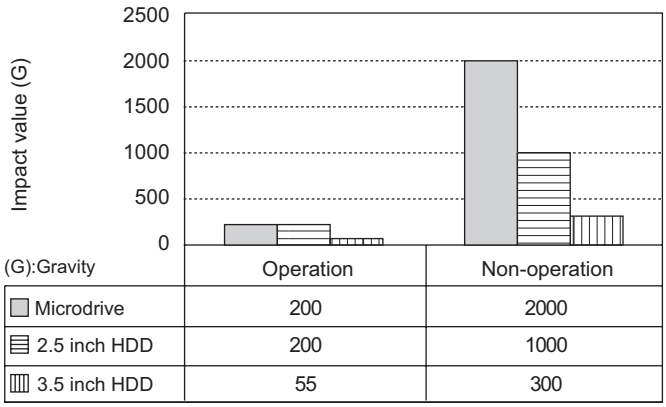
One of the causes of the Microdrive failures is a crash between the disk and the head caused by falls or shocks. The results of the crash are listed as follows.

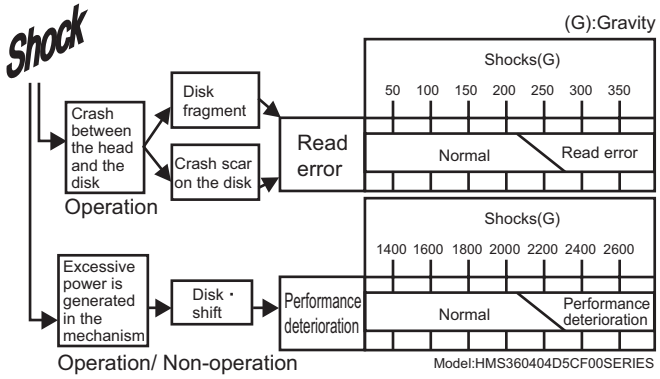
- The scratch on the surface of the disk (crash scar) disables reading/ writing of the damaged part.
- The magnetic material that came off by the crash (disk fragment) causes head reading failure.
- The head distortion deteriorates the read/ write attribute.
- The change in the space between the head and the disk disables the normal read/ write.

Stronger shocks result in the motor axis distortion, causing axial runout and deterioration in performance such as disabling the trace of normally recorded signal.

Pay extra caution not to drop or give shocks to the Microdrive while servicing, and make sure to store the Microdrive in a provided plastic case.







NOTE:

The shock of 200G(G:Gravity), a maximum impact value in operation, is equivalent of the impact of dropping from 20-30cm above the hard floor. The shock of 2000G, a maximum impact value in non-operation, is equivalent of the impact of dropping from 75 - 100cm above the hard floor.

2.4.3.2 Failures caused by static electricity

Microdrives are designed to tolerate static electricity up to 15kV approx. However, head destruction or boot failure will occur as a result of high static electricity given to the magnetic head of a Microdrive that is very vulnerable to static electricity.

As same as handling other electronic parts, make sure not to take charge of static electricity before touching a Microdrive for checking or repairing. In addition, make sure to store the Microdrive in a provided plastic case when it is not in use.

The voltage of 15kV has enough power to break Microdrives destroying heads etc. Errors in Microdrives may occur with lower voltage. Asking the customers about the recording condition: whether it was inside the car in winter, right after getting off the car or in the carpeted area of a hotel etc., is recommended to investigate failures with poor reproducibility.

2.4.3.3 Failures caused by power cut during the operation

When the power is cut off while writing the data on the Microdrive, writing failure occurs in the writing sector (512 byte). As a result, an error will occur while reading the data.

The effects on the system, given by the bad writing sector, depend on the types of the written files on the sector.

If it is user data, the recorded movie may not be replayed.

To prevent failure in writing, do not insert/ remove the Microdrive or cut off the power unless otherwise indicated or needed.

2.4.4 Microdrive backup

Unlike the information on tapes, customers' information on Microdrives can become unreadable in an instant.

Taking into account the personal information management, do not perform Microdrive backup basically. If backup is needed during the procedure, refer to the followings to carry out the backup.

File Transfer Time Measurement

Recording detail (Recording Capacity)	Detection detail	Microdrive 1 N2B12JRA	Microdrive 2 N2HNY1VA
FAT32 Normal format	via PCMCIA card	12m31s	12m36s
	via USB2.0 reade	00m37s	00m40s
FAT32 Quick format	via PCMCIA card	00m18s	00m19s
	via USB2.0 reade	00m10s	00m09s
15m(1GB)	transmitted by PCMCIA card	16m16s	15m46s
	transmitted by USB2.0 reader	07m25s	07m57s
30m(2GB)	transmitted by PCMCIA card	29m30s	29m47s
	transmitted by USB2.0 reader	14m08s	14m49s
45m(3GB)	transmitted by PCMCIA card	41m23s	42m48s
	transmitted by USB2.0 reader	22m47s	23m23s
60m(4GB)	transmitted by PCMCIA card	56m15s	56m34s
	transmitted by USB2.0 reader	30m02s	29m53s

The above data shows: the elapsed time of copying the recorded information on a Microdrive to a PC and the elapsed time of formatting the Microdrive with the PC.
From the results of the measurement, it is clear that the data transfer with a commercial USB2.0 Reader/ Writer is about twice as quick as transfer with a PCMCIA card.
Using USB2.0 Reader/ Writer is recommended when frequent data backup or data re-writing on the Microdrive is required.
Backup should be performed all the recorded files on the Microdrive.Formatting must be done with the main unit that operates normally.If a Microdrive that is more than 2 GB is formatted with the main unit, it is formatted as FAT (FAT16), and a drive that is more than 2GB is formatted FAT32.
Please refer to 2.4 Format for formatting.

2.4.5 Checking the main unit/ Microdrive good or bad

In order to repair or check MC100, 200, 500, judging the cause of the failures, whether it is the main unit or the Microdrive, is essential. The product failures that are brought into repair/ check fall into the following categories.

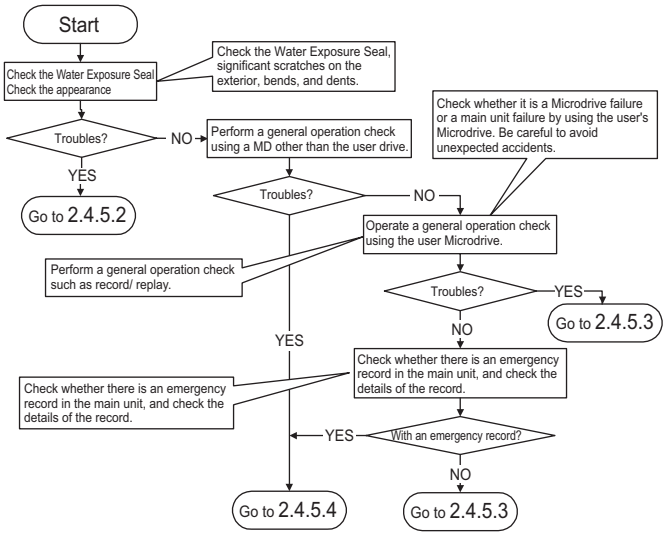
(1) Microdrive failures caused by the users handling such as fall, shocks, and submergence.
(2) Main unit operation failures caused by the Microdrive failures.
(3) Microdrive operation failures caused by the main unit failures.

NOTE:

Unlike DVC tapes, the Microdrives of MC100, 200, 500 are recognized as parts of the main unit. It is essential that the main unit and the Microdrive are brought in as a pair for service. Basically, do not accept the main unit alone for repair or check.

2.4.5.1 Separations of the parts failures

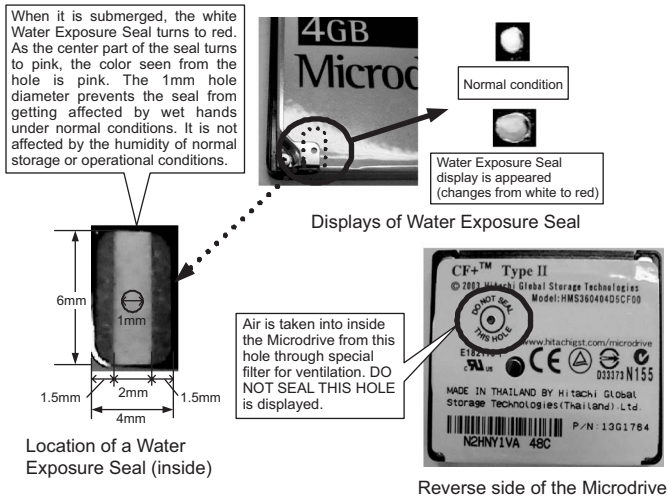
The procedure to identify the causes of the failures whether it is in the main unit or in the Microdrive is explained in this section.


Start
Check the Water Exposure Seal Check the appearance
Check the Water Exposure Seal, significant scratches on the exterior, bends, and dents.
Troubles?
NO
Perform a general operation check using a MD other than the user drive.
YES
Go to 2.4.5.2
Troubles?
NO
Check whether it is a Microdrive failure or a main unit failure by using the user's Microdrive. Be careful to avoid unexpected accidents.
Operate a general operation check using the user Microdrive.
Perform a general operation check such as record/ replay.
Troubles?
YES
Go to 2.4.5.3
NO
YES
Check whether there is an emergency record in the main unit, and check the details of the record.
Check whether there is an emergency record in the main unit, and check the details of the record.
YES
With an emergency record?
NO
Go to 2.4.5.4
Go to 2.4.5.3

2.4.5.2 Microdrive failures caused by user handling

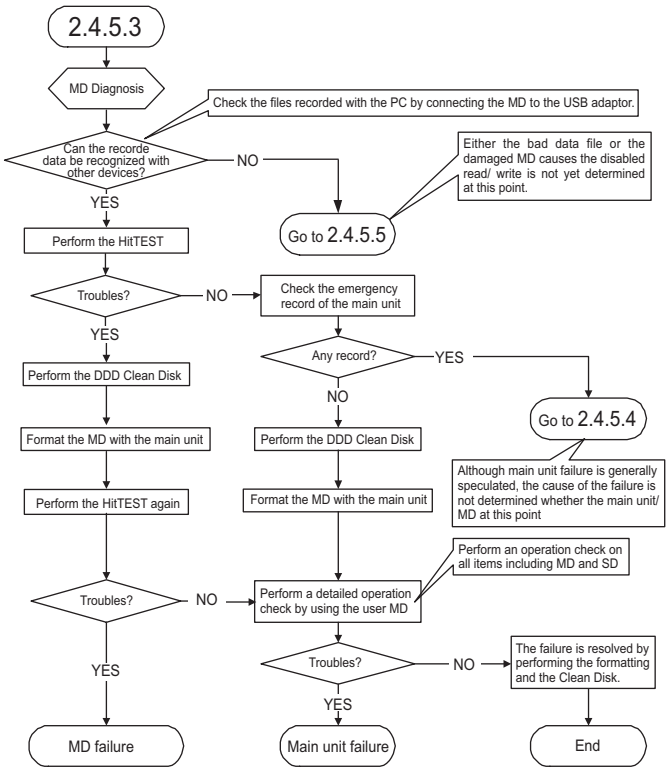
As previously explained, Microdrive failures may possibly be caused by falls or shocks. Further more, dropping Microdrives in the water causes crucial failures to Microdrives.
Supplied Microdrives (not all the commercial Microdrives) have the same type of Water Exposure Seal that are used in cellular phones. Before checking the failures, check whether there is a Water Exposure Seal display appeared.
In addition, check whether there are any significant scratches, bends, or dents that shows the sign of falls or shocks.
Other check items are as follows.

(1) Check whether there are any letters written with a pencil or a pen on the label of the Microdrive. The pen pressure gives distortion on the Microdrive, resulting in an operation failure. It is noted in the Instruction Book.
(2) Check whether there are any stickers affixed on the Microdrive. The space between the Microdrive and the housing is very little. Affixing unnecessary stickers may lead loading the Microdrive in a wrong position, resulting in contact failure or remove disk failure. There is a hole on the reverse side of the Microdrive for ventilation through special filter. Sealing the holes gives effect on the operation.
(3) Check whether the Microdrive label is peeled or turned. If there are peel or turn in the label, the loading failure may occur. Peels or turns will not occur under normal conditions, thus storage or usage under hot and humid condition, near organic solvent, or exposure to the direct sunlight are considered.


When it is submerged, the white Water Exposure Seal turns to red. As the center part of the seal turns to pink, the color seen from the hole is pink. The 1mm hole diameter prevents the seal from getting affected by wet hands under normal conditions. It is not affected by the humidity of normal storage or operational conditions.
4GB
Normal condition
Water Exposure Seal display is appeared (changes from white to red)
Displays of Water Exposure Seal
6mm
1mm
1.5mm
2mm
1.5mm
4mm
Location of a Water Exposure Seal (inside)
Air is taken into inside the Microdrive from this hole through special filter for ventilation. DO NOT SEAL THIS HOLE is displayed.
CF+™ Type II
MADE IN THAILAND BY Hitachi Global Storage Technologies(Thailand).Ltd.
N2HNY1VA 48C
Reverse side of the Microdrive

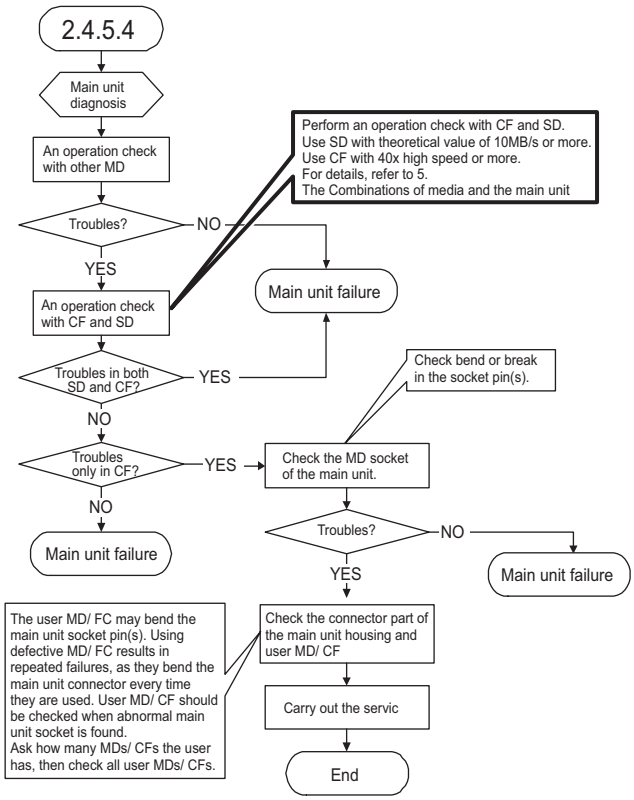
2.4.5.3 Main unit operation failures caused by the main unit/ Microdrive failures.

2.4.5.2 There is a possibility of a Microdrive being damaged even though there is no notable failure in appearance.
Main unit failures also result in abnormal operation in a Microdrive.
Identifying the causes of the failures in the main unit is explained in this section.
In the diagram, MD stands for a Microdrive, CG for a compact flash card, and SD for a SD card.


2.4.5.3
MD Diagnosis
Check the files recorded with the PC by connecting the MD to the USB adaptor.
Can the recorde data be recognized with other devices?
NO
Either the bad data file or the damaged MD causes the disabled read/ write is not yet determined at this point.
YES
Go to 2.4.5.5
Perform the HitTEST
Troubles?
NO
Check the emergency record of the main unit
YES
Any record?
YES
Perform the DDD Clean Disk
NO
Go to 2.4.5.4
Format the MD with the main unit
Perform the DDD Clean Disk
Although main unit failure is generally speculated, the cause of the failure is not determined whether the main unit/ MD at this point
Perform the HitTEST again
Format the MD with the main unit
Perform an operation check on all items including MD and SD
Troubles?
NO
Perform a detailed operation check by using the user MD
Troubles?
NO
The failure is resolved by performing the formatting and the Clean Disk.
YES
YES
MD failure
Main unit failure
End

2.4.5.4 Operation failures caused by main unit failures

2.4.5.3 Judging from the separation of the main unit and MD, the operation failure is more likely to be caused by the main unit failure. However, the main unit failure has not been determined yet, as there is a possibility of the user MD failure causing the main unit damage. The following procedure shows how to determine the main unit failure.

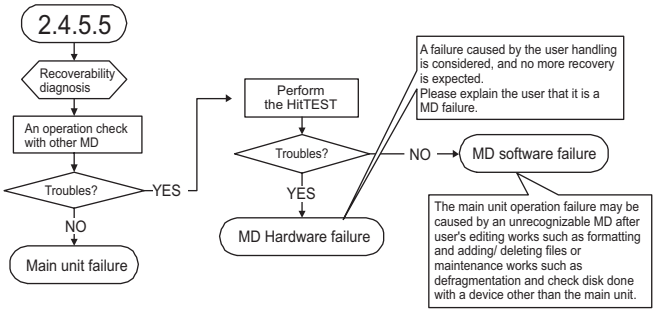

2.4.5.4
Main unit diagnosis
An operation check with other MD
Perform an operation check with CF and SD.
Use SD with theoretical value of 10MB/s or more.
Use CF with 40x high speed or more.
For details, refer to 5.
The Combinations of media and the main unit
Troubles?
NO
YES
Main unit failure
An operation check with CF and SD
Troubles in both SD and CF?
YES
Check bend or break in the socket pin(s).
NO
Troubles only in CF?
YES
Check the MD socket of the main unit.
NO
Troubles?
NO
Main unit failure
Main unit failure
YES
The user MD/ FC may bend the main unit socket pin(s). Using defective MD/ FC results in repeated failures, as they bend the main unit connector every time they are used. User MD/ CF should be checked when abnormal main unit socket is found.
Ask how many MDs/ CFs the user has, then check all user MDs/ CFs.
Check the connector part of the main unit housing and user MD/ CF
Carry out the servic
End

2.4.5.5 Disabled read/ write with other devices

When read/ write cannot be done with the main unit, the main unit failure is considered in most cases. Recognition failure caused by the main unit writing bad data can be considered.
The causes of read/ write failures are as listed below.

(1) Damaged mechanism parts or electric parts inside the MD. (Hardware failure)
(2) Damaged information in the MD. (Software failure)

In the case (1), it seems very difficult to recover, but there is a possibility of recovery in the case (2) by using commercial software. The following procedure shows how to figure out whether the damage is in the hardware or in the software, and whether it is recoverable or not.


2.4.5.5
Recoverability diagnosis
An operation check with other MD
Troubles?
YES
NO
Main unit failure
Perform the HitTEST
Troubles?
NO
MD software failure
YES
MD Hardware failure
A failure caused by the user handling is considered, and no more recovery is expected.
Please explain the user that it is a MD failure.
The main unit operation failure may be caused by an unrecognizable MD after user's editing works such as formatting and adding/ deleting files or maintenance works such as defragmentation and check disk done with a device other than the main unit.

2.4.5.5.1 Microdrive hardware failure

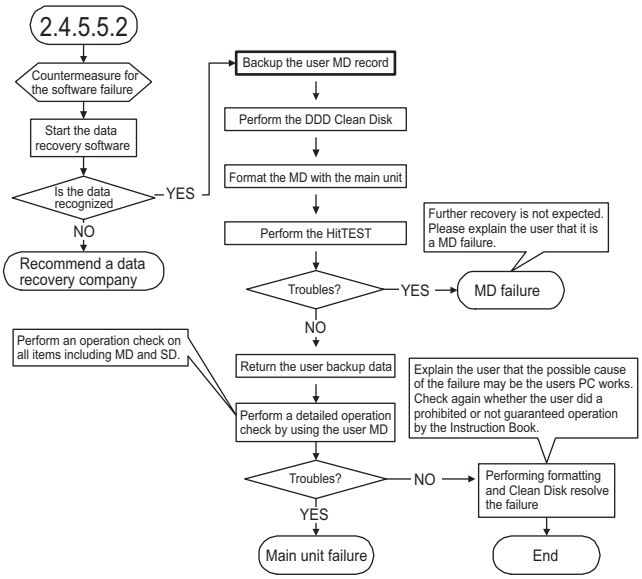
Although no failure was found in the MD appearance at the time of the separation of 2.4.5.1, actually there is considerable damage disabling the operation. In this case, "Shipping Damage" (damage caused by the transportation) is displayed as a result of HiTest diagnosis. Surely, a possibility of the products damaged on route from the production plants to the shops and then to the consumers cannot be denied.
However, MDs are stored in protection cases or in main units and the transportation shock that damages only the MDs is unrealistic. A failure cause by the user handling is more likely considered.

Recovery method

Asking a data recovery company (a data salvage company) seems the only way.
Even if the MD is not recognized a drive, a transmission may be possible with the MD (light hardware failure). In this case, system recovery software such as Norton Utilities in Norton SystemWorks 2005 (NOTE1) may help drive recognition.
Once the drive recognition is recovered, the record may be recovered by the method mentioned in 2.4.5.5.2 Microdrive software failure. However, if it is a hardware failure, banning the use of the MD is strongly recommended.

2.4.5.5.2 Microdrive software failure

Most of the software failures are caused by the unrecognizable MD after user's editing works such as formatting and adding/ deleting files or maintenance works such as defragmentation and check disk done with a device other than the main unit.
Basically, do not recover user data. If recovery is needed in certain cases, recovery can be done by using recovery software, which can recover MPEG2 data, such as Final Data 3.0 Premium. It enables the drive recognition and the data reading. Once the data is recovered, follow the below procedure.


2.4.5.5.2
Countermeasure for the software failure
Start the data recovery software
Is the data recognized
YES
NO
Recommend a data recovery company
Backup the user MD record
Perform the DDD Clean Disk
Format the MD with the main unit
Perform the HitTEST
Further recovery is not expected. Please explain the user that it is a MD failure.
Troubles?
YES
MD failure
NO
Perform an operation check on all items including MD and SD.
Return the user backup data
Explain the user that the possible cause of the failure may be the users PC works. Check again whether the user did a prohibited or not guaranteed operation by the Instruction Book.
Perform a detailed operation check by using the user MD
Troubles?
NO
Performing formatting and Clean Disk resolve the failure
YES
Main unit failure
End

NOTE1:

Norton SystemWorks 2005 (Latest version on 2005/ 7)
It is Symantec's data recovery software.
For system requirements and other details, please check their web site.http://www.symantec.com/region/jp/products/

NOTE2:

Final Data 3.0 Premium Office (Latest version on 2005/7)
It is AOS Technologies' data recovery software.
Although there are some kinds of recovery software as FINALDATA series from this company, this is the cheapest one that can recover MPEG2.
For system requirements and other details, please check their web site.http://www.finaldata.ne.jp/

2.4.6 Microdrives with operation guarantee

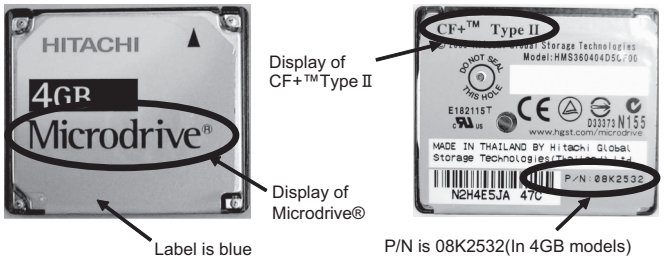
Microdrives are sold in 3 different ways.

(1) Microdrives sold individually as retail products
(2) Microdrives used as provided products with other equipments
(3) Microdrives used as built-in products of other equipments

Among the above three, only 1 and 2 are operation guaranteed by EVERIO, but 3 is exempt from the guarantee.
The products of each sales type are explained as follows.

(1) Microdrives sold individually as retail products.

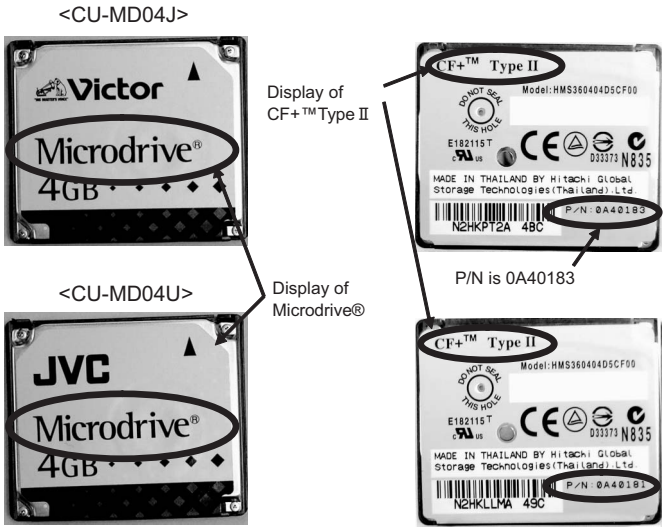
There are 2 types of individually retailed Microdrives: sold by Hitachi and sold by other companies with OEM supplied by Hitachi.
Even among the OEM products, they are sold in different product types. If the supply quantity is small, only the packaging is changed and the Microdrives themselves are sold with Hitachi logo. While the logo and the label design are changed to show the OEM distributor's name when the supply quantity is large.
The Microdrives with Hitachi labels are affixed with blue labels.



Individually retailed Microdrive (Obverse side)　　Individually retailed Microdrive (Reverse side)

Although the colors of the OEM logo labels vary, all these labels have displays of MicrodriveR on the obverse sides and displays of CF+^{TM}Type II on the reverse sides.
There are Microdrives with either "Victor" or "JVC" logo labels for our company.

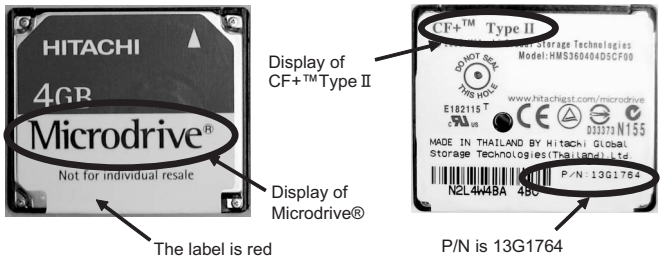
- For individual sales in Japan CU-MD04J (With "Victor" logo) These Microdrives are designed for the use with EVERIO. It is to promote the use of EVERIO by providing Microdrives, which are not widely available, as Victor brand merchandise. The purpose is to support the sales of EVERIO.
  In the Metropolitan area and in large city areas, it is relatively easy to obtain Microdrives, but it is difficult to obtain Microdrives in remote areas. That is the reason for the individual sales of Microdrives.
- For individual sales in overseas CU-MD04U(With "JVC" logo)The main purpose of the sales is the same as that of CU-MD04J. The additional purpose of the sales of CU-MD04U is to sell Microdrives as campaign promotion products for the release, at a low price with the coupons that come with EVERIO.



Individually retailed Microdrive for Victor/ JVC (Obverse sides)　　Individually retailed Microdrive for Victor/ JVC (Reverse sides)

(2) Microdrives used as provided products with other equipments

This is a red labeled Microdrive which is provided with EVERIO.These Microdrives are produced and used as provided products for the equipments that use Microdrives.
Besides being provided with the supporting products, they are used as replacement for the provided Microdrives with operation failure, and used for operation check at the service sites.
Therefore, please let customers buy "1. Microdrives sold individually as retail products" if customers wish to buy ones for the replacement of their lost Microdrives or for additional Microdrives to the provided ones. The sales of "2. Microdrives used as provided products with other equipments" is prohibited.
Initially, the provided Microdrives were used only with EVERIO. Yet recently, the equipments that use Microdrives have increased and Microdrives with red labels are use by other companies as well.
The function and performance are as same as the Microdrives with blue labels.
On the labels of these Microdrives, "MicrodriveR" is displayed on the obverse sides and "CF+^{TM}Type II" is displayed on the reverse sides.

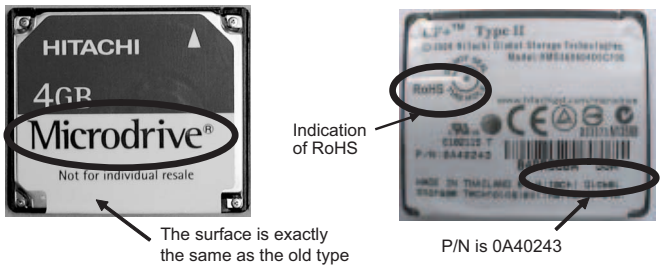


Provided Microdrive (Obverse side)

Provided Microdrive (Reverse side)

There is another type of Microdrive with red label.

These Microdrives have been shipped since April, 2005 and they will be replacing the Microdrives (P/N: 13G1764) in the previous page.
When 6GB Microdrive was developed, the data transfer speed and the areal density were improved. The improvement was also applied to 4 GB Microdrive.
For the convenience sake, define the Microdrive with P/N: 13G1764 as an old type and the Microdrive with P/N: 0A40243 as a new type.



New type provided Microdrive (Front)

New type provided Microdrive (Back)

These Microdrives correspond to the RoHS Directives which is European law.To distinguish new and old types, look for the P/N difference and with or without the RoHS indication.The new and the old Microdrives are compatible although their inner parts are different.

Remarks

"RoHS" is an abbreviation of "Restriction of the Use of Certain Hazardous Substances". The "RoHS Directives" is the law of the regulation concerning the use of hazardous substances. The "RoHS Directives" bans the use of six substances: lead, hexavalent chromium, mercury, cadmium, and the two of the polybrominated flame retardants, among hazardous substances used in electrical and electronic equipments from July 2006 in fifteen countries in European Union (EU).

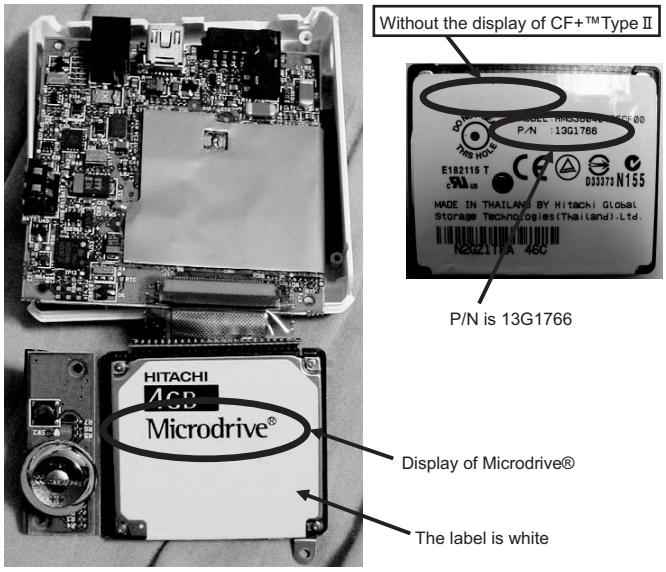
There are no equivalent regulations in Japan or in the U.S.A. However, for the efficiency of the business activity, leading global manufacturers tend to standardize designs and specifications following "RoHS Directives". These global manufacturers are speeding up in controlling the chemical substances and developing the substitute substances. Prior to the law enforcement in July 2006, Matsushita group including VICTOR/ JVC introduced the RoHS corresponding parts for the shipment from April 2005, and the service parts will be replaced gradually.

(3) Microdrives used as built-in products of other equipments

This is a Microdrive with a white label. These Microdrives are built internally in equipments such as PCs, PDAs, or MP3 players. Normally, these Microdrives cannot be removed from those equipments.

Unlike the above mentioned Microdrives with blue labels, with labels for OEM, or with red labels, these Microdrives are customized exclusively for the housing equipments.
Therefore, it is obvious that these built-in Microdrives cannot be operation guaranteed as they do not have compatibility with other equipments. They might damage the connected equipments at the worst.
In the past, it was introduced through internet that high capacity drives could be obtained at a low price by using built-in Microdrives of MP3 players. Many built-in Microdrives were removed to be used, but the use of this kind is restricted in the current Microdrives by adopting certain countermeasures.
The restriction details are as follows. Built- in Microdrives are not produced as True IDE compliant. As a result, they are not recognized as IDE external equipments and they cannot be used with the PCs even if they are connected to the PCs via PCMCIA adapters.
Therefore the built-in Microdrives, except the ones that had been produced before the countermeasure was taken, do not operate with EVERIO.
The criteria for Microdrives with operation guarantee by EVERIO are as follows.

(1) Microdrives with display of"Microdrive$^{(R)}$"
(2) Microdrives with display of "CF+^{TM}Type II"
(3) Microdrives with less than 6GB (As of July, 2005)



2.4.7 Combinations of media and a main unit

2.4.7.1 Types of media

This unit has 2 types of slots, one for a Microdrive/ Compact Flash card, and the other for a SD card.
From the menu, movies/ pictures/ audio can be selected for a medium in either one of the slots.

Recording mode	Factory setting
Movies	MD/CF
Pictures	SD
Audio	SD

As movies, pictures, and audio can separately select the slots, using one slot for all recording mode is possible. However, as movies require large capacity and high transmission speed, the available recording mode (image quality) is limited.

(Refer to 5.2.3 Image quality and support media.)
Recording movies in Microdrive setting is recommended.

2.4.7.2 Movies

Folder names and file names of moving images are created within EVERIO, compliant to the SD-VIDEO standard 1.1(NOTE).

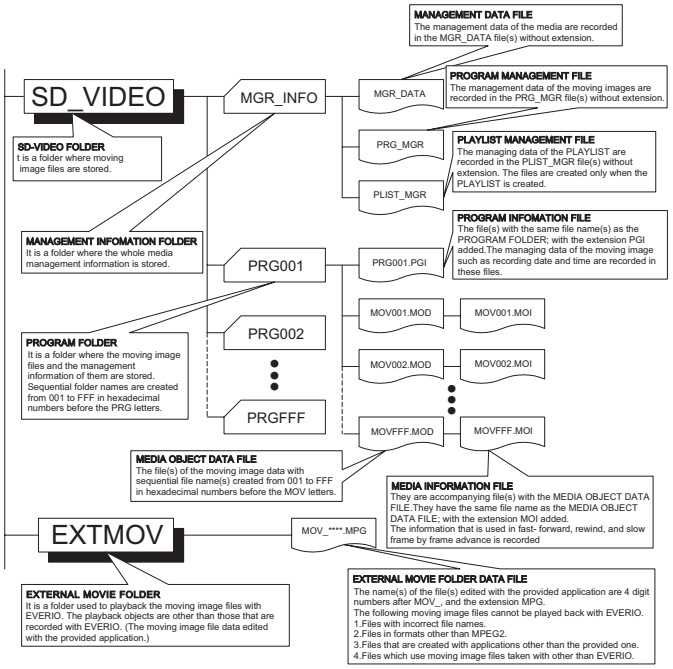
NOTE:

SD-Video standard

SD-Video standard is a standard for SD Memory Card format of recording moving images established by SD Card Association.It is used when recording moving images on SD Memory Cards with mobile devices such as digital video cameras.

As it is a new standard, the files cannot be easily applied to PCs as they are. However, the files can be converted in high-speed to DVD video by just rewriting the file header information without re-encoding. DOLBY DIGITAL AC3 is adopted for easy conversion of the audio into DVD.

For details, please refer to http://www.sdcard.com/.


MANAGEMENT DATA FILE
The management data of the media are recorded in the MGR_DATA file(s) without extension.
SD_VIDEO
MGR_INFO
MGR_DATA
PROGRAM MANAGEMENT FILE
The management data of the moving images are recorded in the PRG_MGR file(s) without extension.
SD-VIDEO FOLDER
t is a folder where moving image files are stored.
PRG_MGR
PLAYLIST MANAGEMENT FILE
The managing data of the PLAYLIST are recorded in the PLIST_MGR file(s) without extension. The files are created only when the PLAYLIST is created.
PLIST_MGR
MANAGEMENT INFOMATION FOLDER
It is a folder where the whole media management information is stored.
PRG001
PRG001.PGI
PROGRAM INFOMATION FILE
The file(s) with the same file name(s) as the PROGRAM FOLDER; with the extension PGI added.The managing data of the moving image such as recording date and time are recorded in these files.
MOV001.MOD
MOV001.MOI
PROGRAM FOLDER
It is a folder where the moving image files and the management information of them are stored. Sequential folder names are created from 001 to FFF in hexadecimal numbers before the PRG letters.
PRG002
MOV002.MOD
MOV002.MOI
PRGFFF
MOVFFF.MOD
MOVFFF.MOI
MEDIA OBJECT DATA FILE
The file(s) of the moving image data with sequential file name(s) created from 001 to FFF in hexadecimal numbers before the MOV letters.
MEDIA INFORMATION FILE
They are accompanying file(s) with the MEDIA OBJECT DATA FILE.They have the same file name as the MEDIA OBJECT DATA FILE; with the extension MOI added.
The information that is used in fast- forward, rewind, and slow frame by frame advance is recorded
EXTMOV
MOV_****.MPG
EXTERNAL MOVIE FOLDER
It is a folder used to playback the moving image files with EVERIO. The playback objects are other than those that are recorded with EVERIO. (The moving image file data edited with the provided application.)
EXTERNAL MOVIE FOLDER DATA FILE
The name(s) of the file(s) edited with the provided application are 4 digit numbers after MOV_, and the extension MPG.
The following moving image files cannot be played back with EVERIO.
1.Files with incorrect file names.
2.Files in formats other than MPEG2.
3.Files that are created with applications other than the provided one.
4.Files which use moving image files taken with other than EVERIO.

Remarks

(1) Recording will stop around 3.8GB when shooting continuous video with a medium more than 2GB.

(2) Normal recording may not be done depending on the image quality setting when using a slow writing medium.

Movies are recorded SD-VIDEO1.1 standard, (images) MPEG-2-PS (with RDI),(audio) Dolby Digital AC-3, NTSC 60 frame/ PAL 50 frame,aspect 4:3 or aspect 16:9

Movie recording is explained as follows.

2.4.7.2.1 Recording rate

	Image			Audio			RDI	Total bit rate
Image quality mode (Image size)	Image quality (Sensitivity comparison)	Bit rate	CBR/ VBR	Sampling frequency	Bit rate	CBR/ VBR		
Ultra fine (720×480)	Equivalent to DVC	8.5Mbps	CBR	48 kHz	384kbps	CBR	32.768kbps	8.92 Mbps
Fine (720×480)	Equivalent to DVD cam	5.5Mbps	CBR	48 kHz	384kbps	CBR	32.768kbps	5.92 Mbps
Normal (720×480)	Equivalent to VHS	4.2Mbps	VBR	48 kHz	256kbps	VBR	32.768kbps	4.49 Mbps
Economy (325×240)	Equivalent to video CD	1.5Mbps	VBR	48 kHz	128kbps	VBR	32.768kbps	1.66 Mbps

2.4.7.2.2 Recording time (approximately minutes)

	Ultra fine (720×480)	Fine (720×480)	Normal (720×480)	Economy (352×240)
SD／CF 128MB	2 minutes	3 minutes	4 minutes	10 minutes
SD／CF 256MB	4 minutes	6 minutes	7 minutes	21 minutes
SD／CF 512MB	8 minutes	12 minutes	15 minutes	43 minutes
SD／CF 1GB	16 minutes	24 minutes	31 minutes	86 minutes
MD 2GB	30 minutes	45 minutes	60 minutes	150 minutes
MD 4GB	60 minutes	90 minutes	120 minutes	300 minutes

2.4.7.3 Pictures

Folder names and file names of still images are created within EVERIO, compliant to the DCF (Design rule for Camera File system) version 2.0 (NOTE1).

NOTE1:

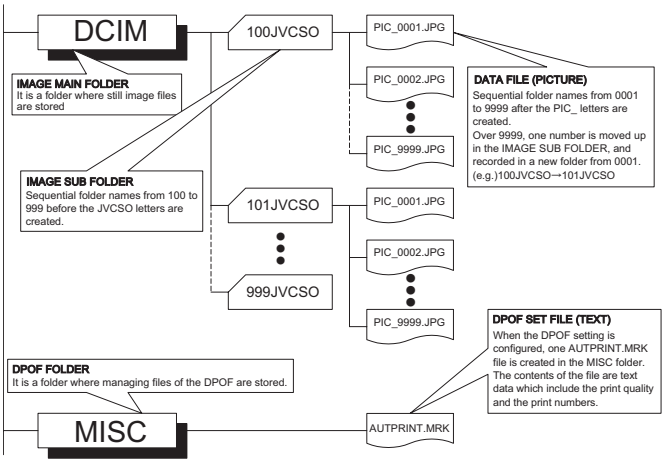
DCF (Design rule for Camera File system) version 2.0

DCF (Design rule for Camera File system) version 2.0 is a standard for digital still camera image formats established by Japan Electronic Industry Development Association (JEIDA). It specifies the folder structures and the memory recording forms based on the Exif-JPEG, and it guarantees compatibility among different models.

Still images can be exchanged among digital cameras that are DCF compliant, regardless of the makes and the models. Printing is possible just by connecting a recording medium to a supporting printer without using a PC.

In addition, the information such as the recording model, the recording date, and the thumbnail is stored in the DCF format image files.

Currently, most digital cameras in Japan support this standard, and the standard is suggested to ISO for international standardization.


DCIM
100JVCSO
PIC_0001.JPG
IMAGE MAIN FOLDER
It is a folder where still image files are stored
PIC_0002.JPG
DATA FILE (PICTURE)
Sequential folder names from 0001 to 9999 after the PIC_ letters are created.
Over 9999, one number is moved up in the IMAGE SUB FOLDER, and recorded in a new folder from 0001.
(e.g.)100JVCSO→101JVCSO
PIC_9999.JPG
IMAGE SUB FOLDER
Sequential folder names from 100 to 999 before the JVCSO letters are created.
101JVCSO
PIC_0001.JPG
PIC_0002.JPG
999JVCSO
PIC_9999.JPG
DPOF SET FILE (TEXT)
When the DPOF setting is configured, one AUTPRINT.MRK file is created in the MISC folder.
The contents of the file are text data which include the print quality and the print numbers.
DPOF FOLDER
It is a folder where managing files of the DPOF are stored.
MISC
AUTPRINT.MRK

Remarks

(1) Even if file migrations, file deletions, or new folder creations are carried out in mid-course, the recording will continue in sequential numbers up to the maximum number (9999).

(2) The recorded maximum number is recorded inside the EEPROM in EVERIO.

(3) If there is a file name that is more than the maximum file number recorded in the EEPROM within the inserted media (CF, Microdrive, or SD Card), recording will start from the number that is one added to the recorded maximum file number in the media. The following file numbers will be given from this number from then on.

(4) Even if a recording medium is changed (e.g. from a Microdrive to a SD Card), or changed within the same

media but to a different card (e.g. from one Microdrive to another Microdrive), the maximum file number recorded in EVERIO is one. The recording will be continued from that number in sequential numbers.
e.g. If a SD Card is changed to another SD Card after shooting from 0001 to 0100, the recording will be started on the newly inserted SD Card in sequential numbers from 0101.

Pictures are recorded as JPEG compression picture Exif2..2, DCF2.0, PictBridge, DPOF standard conformity. There is no restriction of picture recording media or spec, but equivalent transmission speed as for movies is required for rapid shooting.
Picture recording is explained as follows.

2.4.7.3.1 Image size and recording numbers

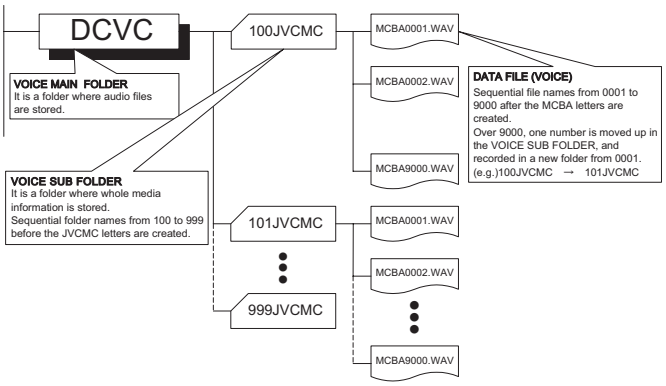
(Approx. numbers)

Capacity	Picture mode	Image size			
		UXGA (1600×1200)	SXGA (1280×960)	XGA (1024×768)	VGA (640×480)
32MB	Fine	34	60	95	205
	Standard	50	120	185	375
64MB	Fine	65	125	200	425
	Standard	110	250	375	755
128MB	Fine	145	280	430	2210
	Standard	245	560	865	5200
256MB	Fine	290	145	865	7756
	Standard	490	245	1735	9999
512MB	Fine	699	1094	1706	3878
	Standard	2285	3555	5565	9999
1GB	Fine	1398	2188	3412	7756
	Standard	4570	7110	9999	9999
2GB	Fine	2797	4376	6826	9999
	Standard	9142	9999	9999	9999
4GB	Fine	5595	8752	9999	9999
	Standard	9999	9999	9999	9999

The value varies slightly according on each medium, Microdrive, Compact flash card, and SD card. In addition, these values are theoretical values, and it does not guarantee the recording numbers.

2.4.7.4 Audio (Voice memo)

Folder names and file names of audio files are created as follows.


DCVC
100JVCMC
MCBA0001.WAV
MCBA0002.WAV
MCBA9000.WAV
VOICE MAIN FOLDER
It is a folder where audio files are stored.
DATA FILE (VOICE)
Sequential file names from 0001 to 9000 after the MCBA letters are created.
Over 9000, one number is moved up in the VOICE SUB FOLDER, and recorded in a new folder from 0001.
(e.g.)100JVCMC → 101JVCMC
VOICE SUB FOLDER
It is a folder where whole media information is stored.
Sequential folder names from 100 to 999 before the JVCMC letters are created.
101JVCMC
MCBA0001.WAV
MCBA0002.WAV
999JVCMC
MCBA9000.WAV

Remarks

(1) It does not playback the objects other than the VOICE SUB FOLDER format (JVCMC folder names after 3 digit numbers).
(2) It does not playback the objects other than the DATA FILE(numbers from 0001 to 9000 after the MCBA letters + WAV extension data).It does not playback WAV files with long file names created by PCs etc.
(3) It checks the ID information in the files. Once the files are determined as re-playable WAV files, they are registered in playback list in orders.
(4) When a medium with multi partition is inserted, it displays and operates the primary partition only.
(5) When the files are renamed 9000 or over with the PC, or another file is inserted, they become the object of playback.

RDI

RDI stands for Real-time Data Information Pack (RDI_PCK). Similar information as Navigation Pack in the DVD-Video standard is written in RDI.The information to realize the playback function such as parental level selection, angle selection, and story selection is recorded. It is added to simplify the creation of the navigation pack when high-speed dubbing to DVD-Videos is carried out in corresponding recorders etc. in future. It is not necessary at the moment.GOP cycle and picture numbers are as same as common DVD etc. They are fixed in all moving image mode as shown below.
NTSC :M=3, N=15
PAL :M=3, N=12

Audio is recorded linear PCM digital recording system (WAV), stereo.There is no restriction of audio recording media or spec. Audio recording is explained as follows.

2.4.7.4.1 Recording mode and sampling frequency

Recording mode	Sampling		Audio mode	Recording bit rate	Data capacity per minute
	Frequency	Data			
Fine	48 KHz	16 bit	Stereo	1.536 Mbps	11.52 MB
Standard	16 KHz	16 bit	Stereo	512 Kbps	3.84 MB
Economy	8 KHz	16 bit	Stereo	256 Kbps	1.92 MB

2.4.7.4.2 Recording time

(Approx. hours, minutes)

	Fine	Standard	Economy
SD／CF 512MB	44m	2h10m	4h25m
MD 2GB	2h50m	8h40m	17h21m
MD 4GB	5h47m	17h21m	34h43m

The value varies slightly according to each medium, Microdrive, Compact flash card, and SD card. In addition, these values are theoretical values, and it does not guarantee the recording time.

2.4.8 HiTest

2.4.8.1 Introduction

CF II compliant 1-inch small hard disk (Microdrive) is used as a recording medium of this model. For operation check and maintenance of the Microdrive, drive diagnostic test software HiTest is used with a license agreement from Hitachi Global Storage Technologies (HGST) which supplies Microdrives to JVC.
Although the Drive Diagnostics & Disposition software (DDD Software) had been used for operation check of the Microdrives, HGST finished developing the DDD Software. As a result, DDD can not be used with upcoming Microdrives and new OS for PCs.
The DDD Software which had writing test and required backup procedures before carrying out the DDD test to protect the recorded contents of the users.

There is an issue of handling the recorded information of the users after backup. There is another matter of increasing backup time regarding mass storage media. The new software HiTest is introduced to countermeasure these matters.
The failure detection capability goes down as there is no writing test. However, our examination shows that the detection accuracy is not influenced by the lack of writing test as most Microdrives which have detected errors in writing test also have errors in reading test.
The only weakness of HiTest is that there is no equivalent function to CleanDisk in DDD software because HiTest does not have writing function.
The handling of this software is explained as follows.

1. Platform Requirements

HiTest operation requires the following platform requirements. Although it may operate on lower specification platforms, we do not guarantee the operation under such platforms.

- PC/AT compatible models (It cannot be used with Macintosh)
- CPU: Pentium 1 GHz or faster
- OS: Windows XP/2000 (SP4 or later)
- RAM with 256MB or more (NOTE1)
- Memory: 10GB or more empty hard disk space
- PCMCIA card (PC card) TYPE II slot (NOTE2)
- Monitor / graphics: 256 colors or more, 800 x 600 minimum, (1024 × 768 or more is suggested)

NOTE1:

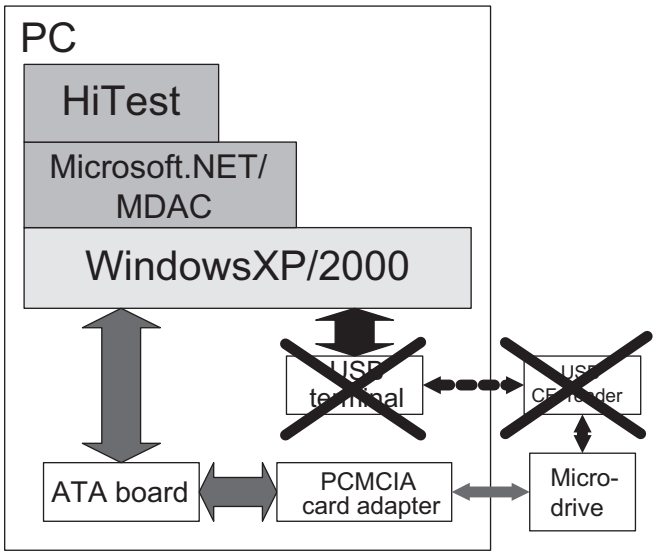
When HiTest is installed to a PC with less RAM capacity left, it may cause the following symptoms.

- An error occurs during the installation, and the installation does not complete.
- The operation becomes unstable while starting up the software.

NOTE2:

There must be PCMCIA card (PC card) TYPE II slot which is equipped to NOTE PCs and some desktop PCs.HiTest cannot be used with CF / Microdrive reader with USB, or CF direct insert drives.

HiTest software does not operate by itself.
Windows, as an operation system, tests Microdrives by controlling ATA board via the functions of Microsoft.NET and Microsoft Data Access Components (MDAC).
Thus, it is impossible to access a Microdrive via a USB terminal which does not go through ATA board.
When using HiTest, Microsoft.NET and Microsoft Data Access Components (MDAC) must be installed in the PCs.
Download the latest programs of Microsoft.NET and Microsoft Data Access Components (MDAC) from the sites below.
Download Microsoft .NET from here.
http://www.microsoft.com/downloads/details.aspx?FamilyID=262d25e3-f589-4842-8157-034d1e7cf3a3&DisplayLang=en
Download Microsoft Data Access Components (MDAC) from here.
http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=6c050fe3-c795-4b7d-b037-185d0506396c



2. How to obtain HiTest

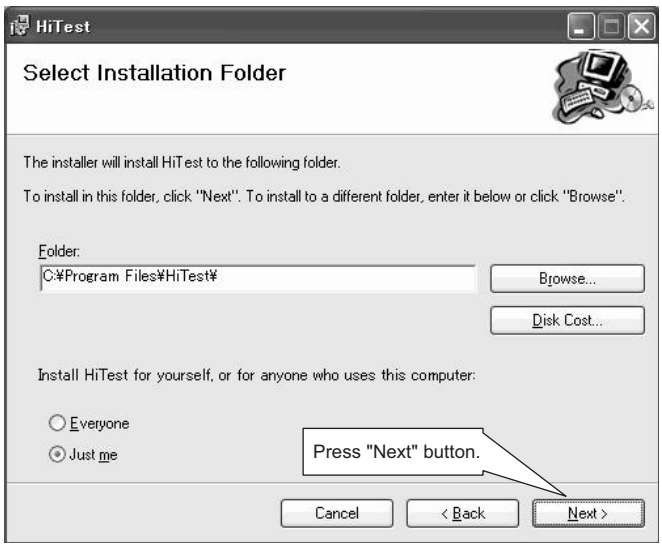
(1) HiTest (HiTest.EXE) can be obtained by downloading from JS-NET. After download, execute HiTest.EXE to create the HiTest. SETUP folder.

3. Installation procedure

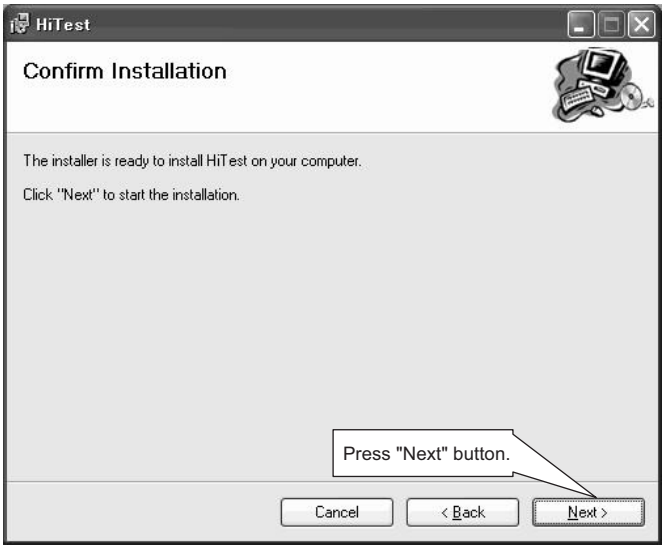
(1) Double click the "Setup.exe" in the HiTest. SETUP folder for start up.
(2) Press the "Next" button to proceed with the installation.

HiTest
Welcome to the HiTest Setup Wizard
The installer will guide you through the steps required to install HiTest on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Press "Next" button.
Cancel
< Back
Next >

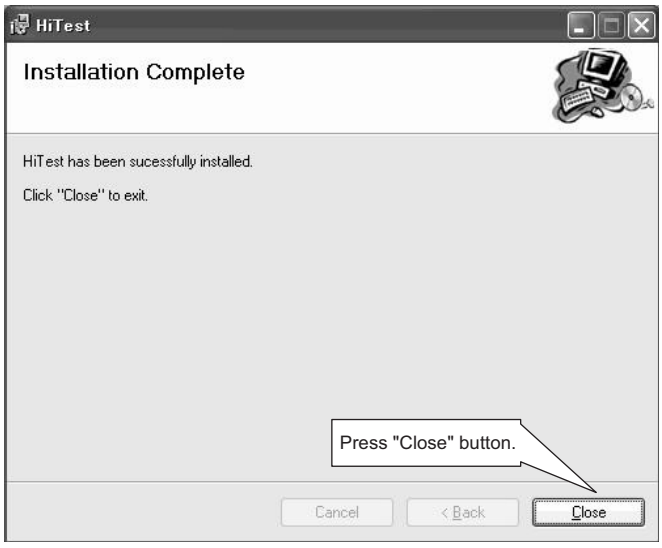
(3) Choose a destination folder, then press the "Next" button.


HiTest
Select Installation Folder
The installer will install HiTest to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:¥Program Files¥HiTest¥
Browse...
Disk Cost...
Install HiTest for yourself, or for anyone who uses this computer:
Everyone
Just me
Press "Next" button.
Cancel
< Back
Next >

(4) Press the "Next" button to proceed with the installation.



(5) When "Installation Complete" is displayed, press the "Close" button to finish the installation.

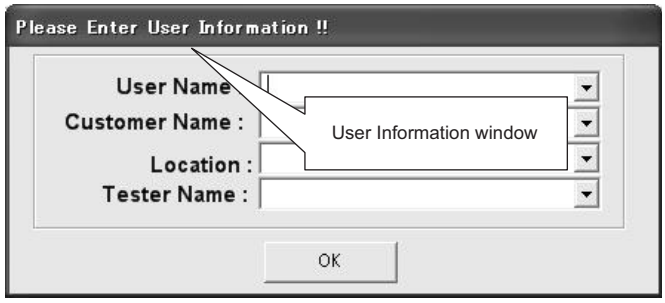


(6) Check whether the "HiTest" icon is on the desktop.

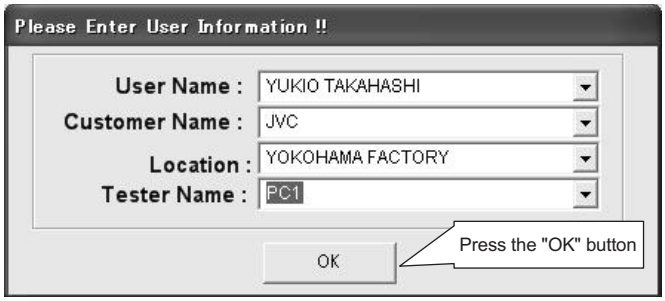
4. Preparation for start up

(1) Double click the "HiTest" icon on the desktop to start the software.

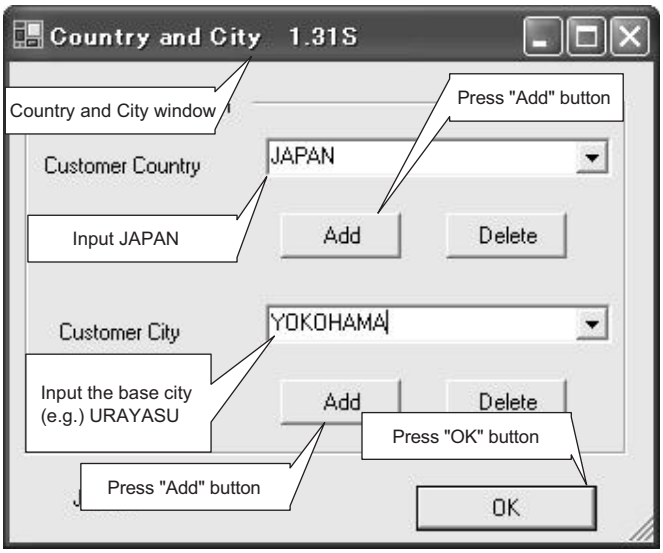
(2) The User Information window is displayed.



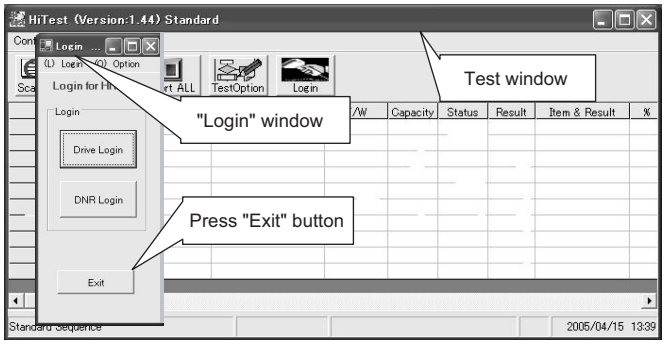
(3) Input the information of the person who carries out the test, then press the "OK" button.
User Name: Input your name in one-byte alphabetical characters.
Customer Name: Input JVC in one-byte characters.
Location: Input the division where you belong to in one-byte alphabetical characters.(e.g. JSCA)
Tester Name: Name the PC on which the test is carried out.
This is to specify the PC where the test is carried out for later checking of the PC performance.
Input any number such as "PC1" in one-byte alphabetical characters.



(4) When the Country and City window opens, input JAPAN in "Customer Country", then press the "Add" button.
Input your base city in "Customer City", then press the "Add" button.
Once these items have been input, they can be selected by pressing the pull down buttons next to input columns from the next time.
If any input error is made, it can be deleted by pressing the "Delete" button.

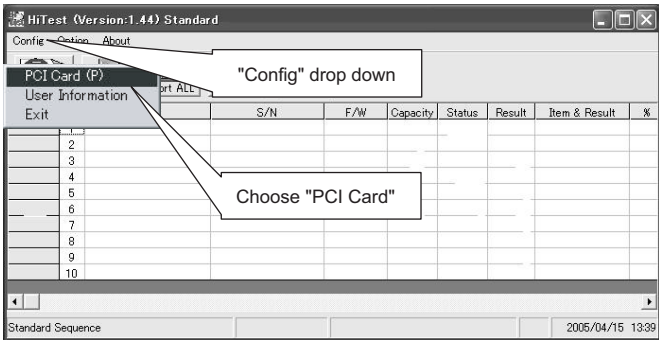


(5) Although the "Login" window is displayed, press the "Exit" button as it is not used now.

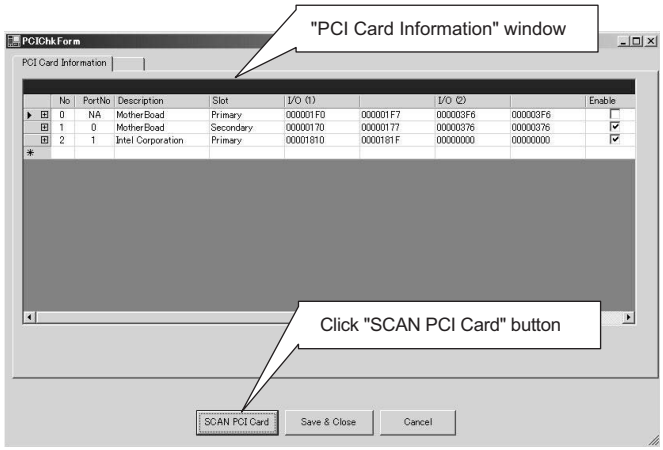


(6) Insert the Microdrive attached PCMCIA adaptor into the PCMCIA card slot on the PC.

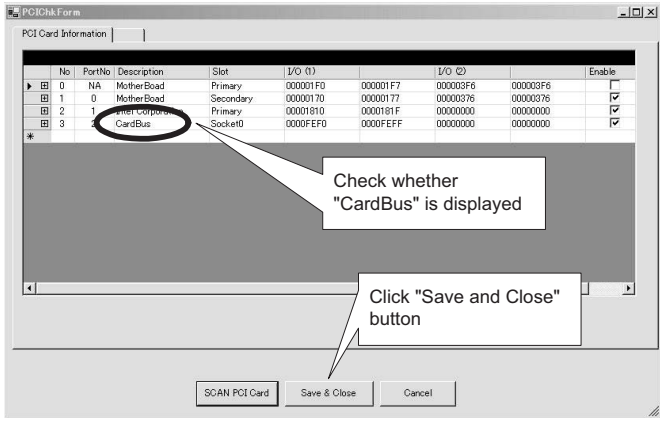
(7) Click the "Config" drop down in the test window, then choose "PCI Card (P)".



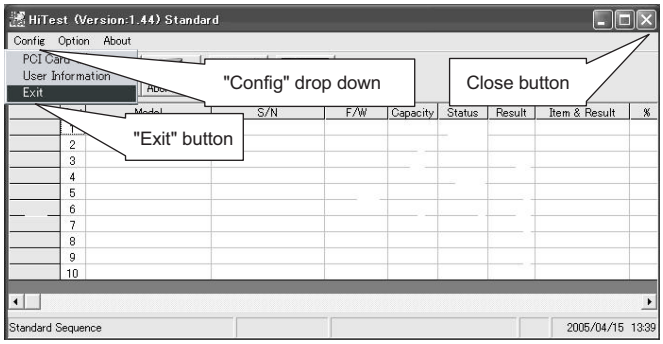
(8) When the "PCI Card Information" window is displayed, click the "SCAN PCI Card" button.



(9) Check whether "CardBus" is displayed in the lowest row, then click the "Save and Close" button.



(10) When the screen returns to the test window, the preparation for ? start up is completed.
Click the "Close" button(X button) in the far upper right, or click the "Config" drop down and select "Exit" to finish the software.



5. Uninstallation

(1) Uninstall HiTest from Add or Remove Programs in Windows.

6. How to use HiTest

6.1 Test preparation

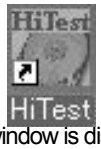
(1) Write down the serial number and the P/N (Part Number) displayed on the back of the Microdrive which is to be tested.

(NOTE)

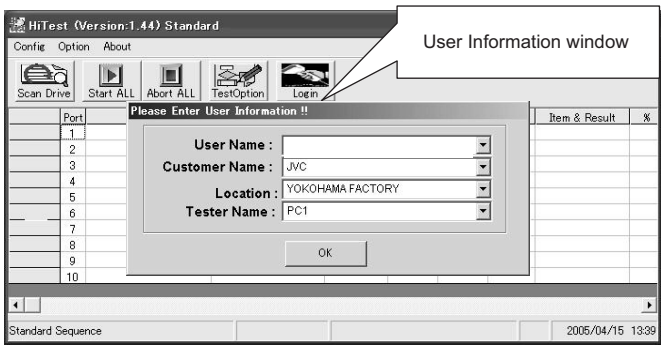
When writing down the serial number and the P/N, check the Water Exposure Seal and any external damages. If there is any abnormality, finish without carrying out the test.

(2) Insert the PCMCIA adaptor which is attached with Microdrive into the PCMCIA card slot on the PC.

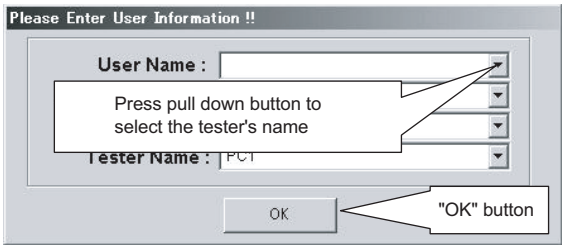
(3) Double click the "HiTest" icon on the desktop to start the software.



(4) User Information window is displayed.

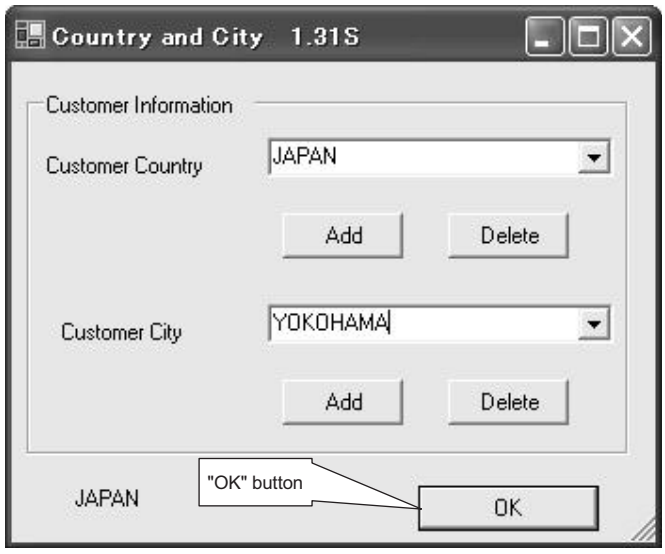


(5) Only "User Name" is left blank. Press the pull down button to select the name of the person who carries out the test, and press the" OK" button.

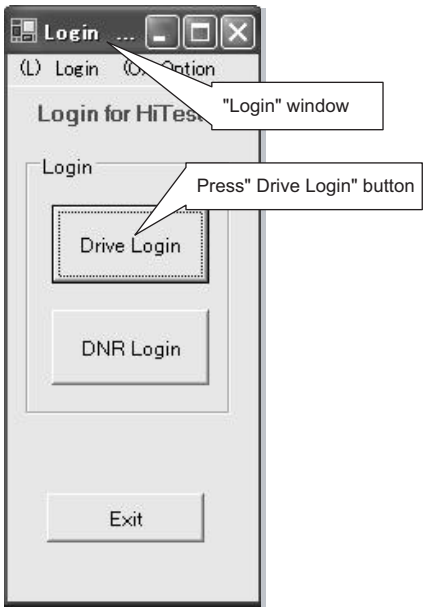


If the display contents are wrong or there is no appropriate name in the "User Name" option, directly input the information in the columns. They will be displayed as options when the pull down button is pressed next time.

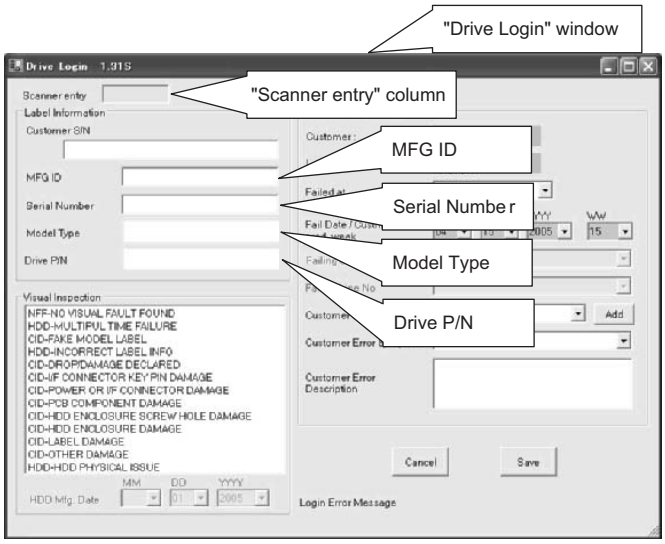
(6) Check the information in the Country and City window. When the information on the country and the city is correct, Press the "OK "button.



(7) When the "Log in" window is displayed, press the "Drive Login" button.



(8) "Drive Login" window is displayed.



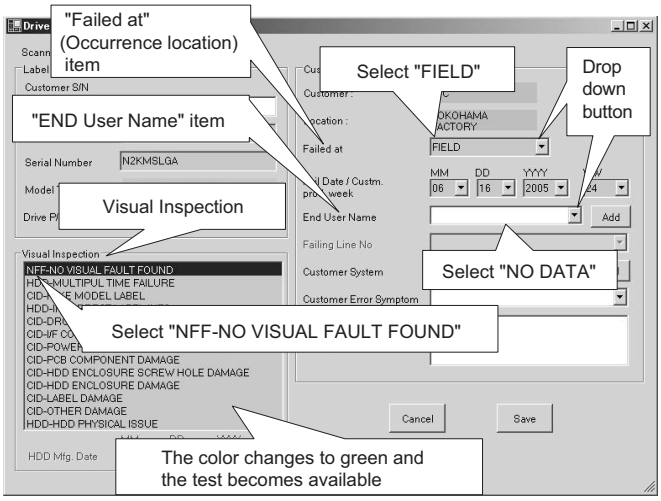
(9) Input the written down P/N in "Scanner entry" (yellow column) in one-byte characters, then press the "Enter" key. The "ModelType" and the "Drive P/N" columns are filled in and the color of the column changes to green.

(10) Input the written down serial number in "Scanner entry" (yellow column) in one-byte characters, then press the "Enter" key. The "MFG ID" and the "Serial Number" columns are filled in and the color of the columns changes to green. ("UNKNOWN" is displayed in "MFG ID")

NOTE:

Make sure to input in "Scanner entry" (yellow column) as direct input to each column is not identified.

(11) Select "NFF-NO VISUAL FAULT FOUND" at the top of "Visual Inspection". Whole "Visual Inspection" section changes to green to show the test availability.

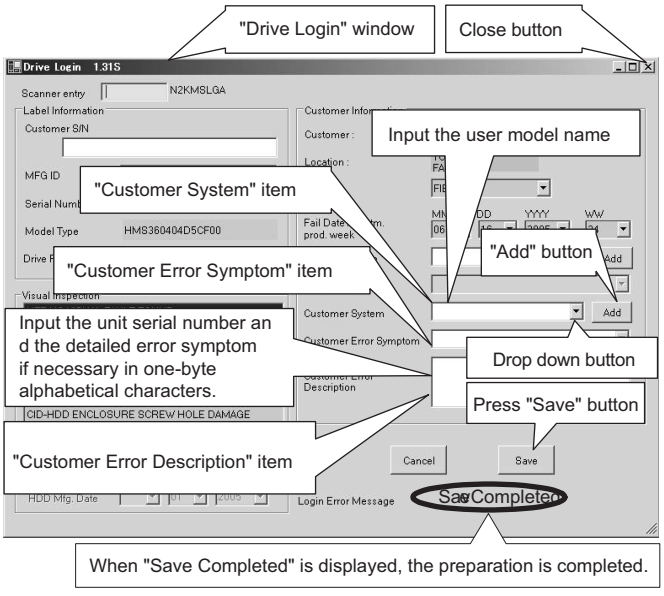

"Failed at" (Occurrence location) item
Select "FIELD"
Drop down button
"END User Name" item
Visual Inspection
Select "NO DATA"
Select "NFF-NO VISUAL FAULT FOUND"
The color changes to green and the test becomes available

(12) Press "Failed at" (Occurrence location) drop down button and select "FIELD".

(13) Press the "END User Name" drop down button and select "NO DATA".

Always select "NO DATA" for this item as JVC does not use this item. However, if the item is left blank, the test will not become available.

(14) Input the user model name in one-byte characters in the "Customer System" item, then press the "Add" button. Select the user model name by pressing the drop down button from the next time.


"Drive Login" window
Close button
Input the user model name
"Customer System" item
"Add" button
"Customer Error Symptom" item
Input the unit serial number and the detailed error symptom if necessary in one-byte alphabetical characters.
Drop down button
Press "Save" button
"Customer Error Description" item
When "Save Completed" is displayed, the preparation is completed.

(15) Press the drop down button to select the error symptom in the "Customer Error Symptom" item.

Error display	Remarks
ABNORMAL NOISE	Use when abnormal noise is generated from HDD
BAD SECTOR	Nonuse
BOOT ERROR	Use when it does not boot and boot failure occurs
CANNOT BE DETECTED	When the unit is connected with USB, the hard disk is not recognized.
DIAG FAIL	Nonuse
FORMAT ERROR	Use when formatting is incapable
HDD ERROR	Use when the display such as "Incorrect media" is shown
SYSTEM UNSTABLE	Use when the failure is in poor reproducibility
OTHER	Use on other failures
NO INFO	Use when there is no information and test is carried out as a trial

(16) Input the movie unit serial number in one-byte characters in the "Customer Error Description" item. If there is information such as failure occurrence conditions, input those additional information in one-byte characters in English.

Input all items, then press the "ENTER" key. The item section changes to green.

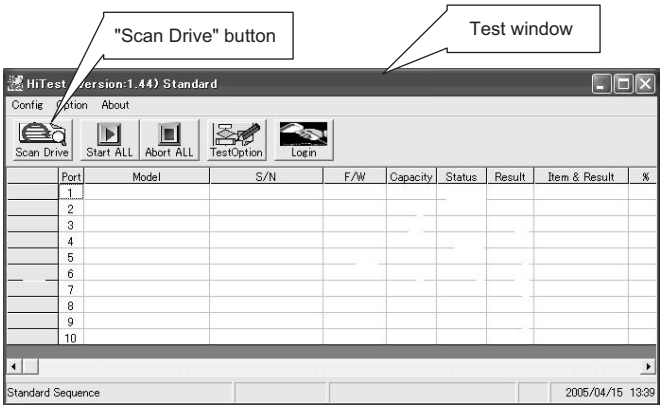
(17) When all the input and the selection have been made, press the "Save" button.

(18) When "Save Completed" is displayed below the "Save" button, it is completed.

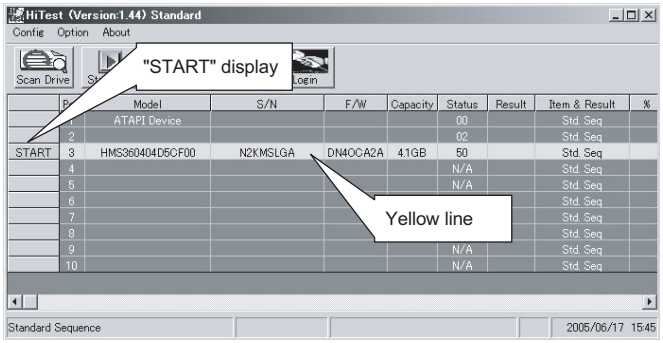
Click the close button (X button) in the far upper right to close the "Drive Login" window.

6.2Starting the test

(1) Click the "Scan Drive" button in the test window.

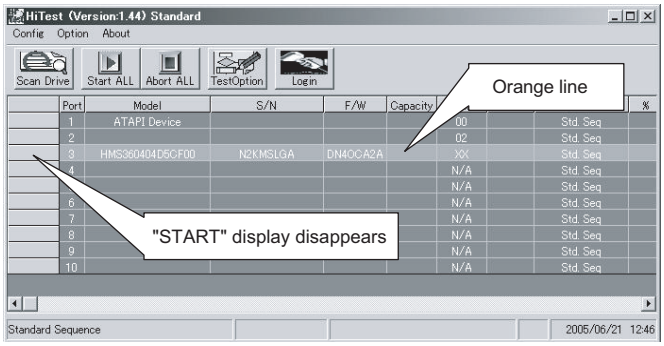


(2) When the serial number and the model name of the Microdrive matches the recorded information in the Microdrive, it is recognized as a drive available for the test. "START" is displayed.



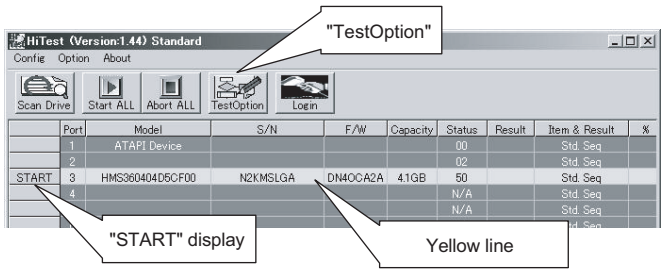
(3) If the serial number and the model name of the Microdrive does not match the recorded information in the Microdrive, the label may have been falsified.
In this case, the below display appears.

(4) Check the message and click the "OK" button.

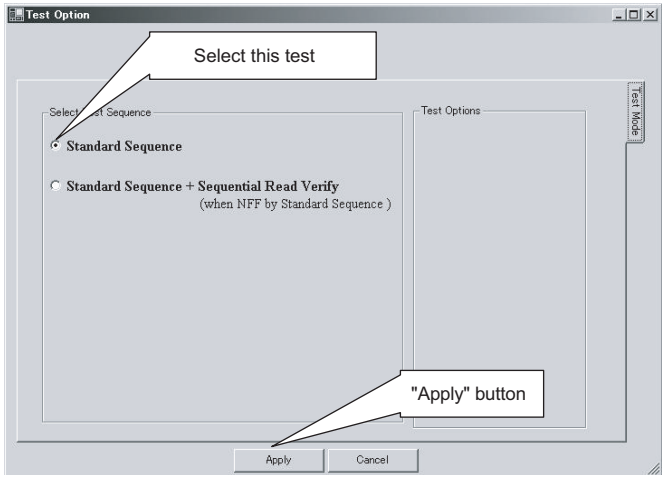


(5) Check the serial number and the model name again, return to 6.1(7), then "Drive Login" again.

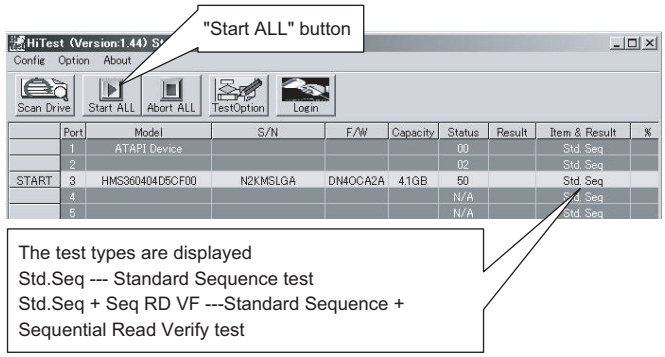
(6) Check that the START display shows yellow line same as in 6.2(2), press the "TestOption" button to select the test details.



(7) When the "Test Option" screen opens, a test can be selected from the two types: "Standard Sequence" test or "Standard Sequence+Sequential Read Verify" test. In usual case, select the "Standard Sequence" test, then press the "Apply" button.



(8) Press the "Start ALL" button to start the test.
During the test the drive serial number is displayed in the light blue line, and the "PROGRESS" window is open to show the progress status.

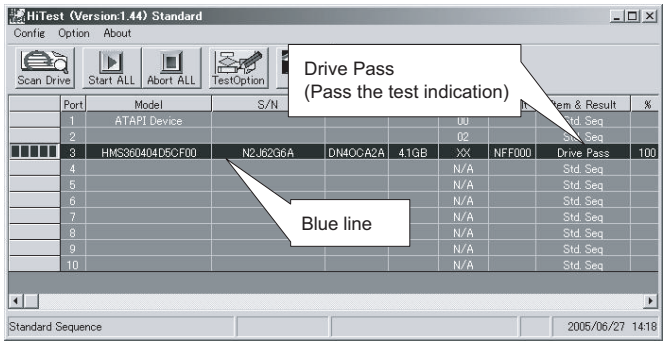

"Start ALL" button
The test types are displayed
Std.Seq --- Standard Sequence test
Std.Seq + Seq RD VF ---Standard Sequence +
Sequential Read Verify test

6.3 Test results

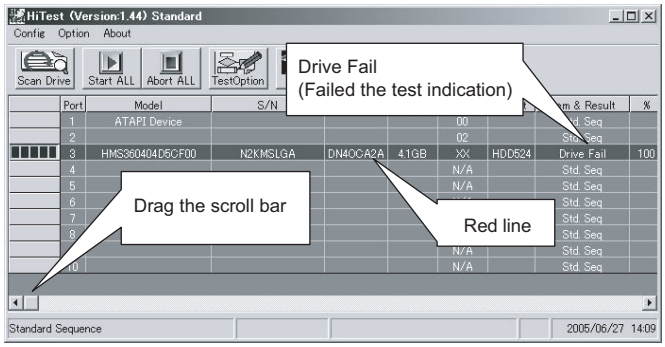
(1) When the test has been finished, the color of the line in the test window changes.
Blue:No defects(Drive Pass)
Red:Failures

NOTE:
The testing time varies according to Microdrives. It takes about 2 to 3 minutes to carry out the "Standard Sequence" test.

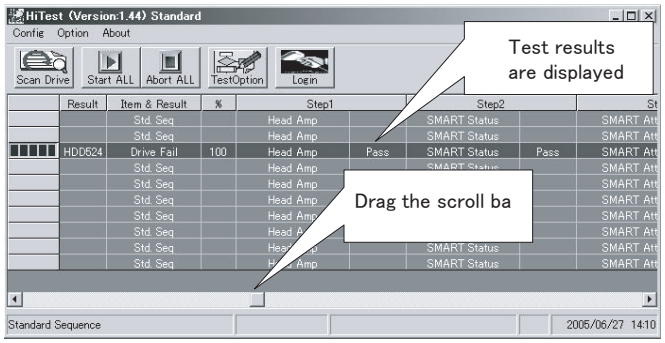
<Test results are OK>

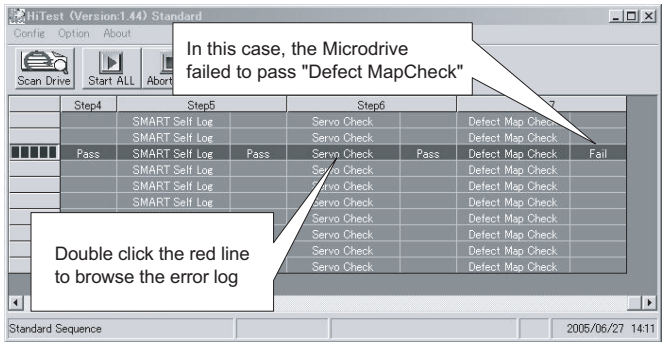


<Test results are NG>



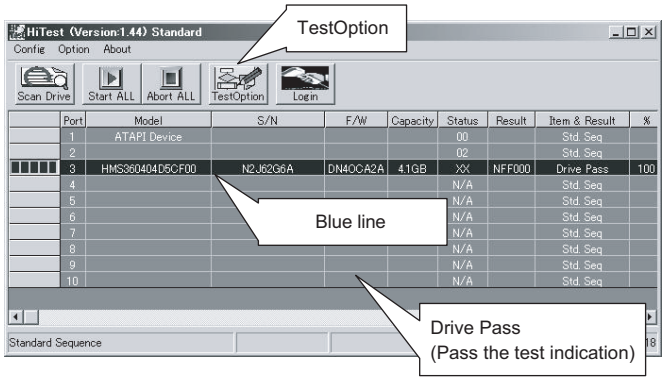
(2) View the test results by dragging the scroll bar as the detailed results are displayed in horizontal rows.
Pass:No defects(Drive Pass)
Fail:Failures



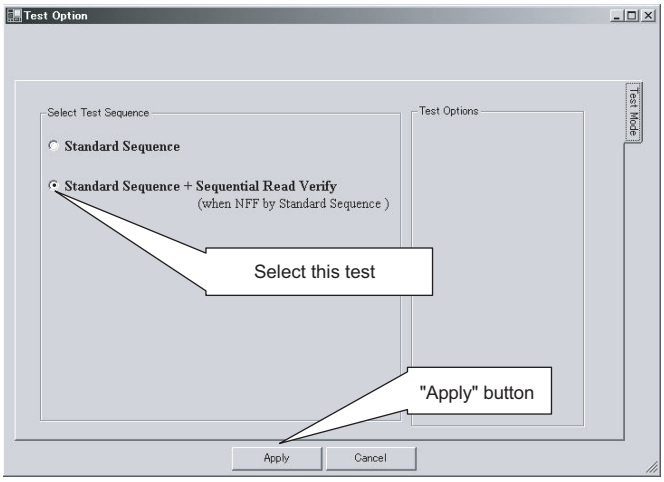


(3) For more details, point the cursor to the red line and double click to browse the error log.Refer to 6.4 Checking the error log for the details of the error log.
(4) The rest of the procedure varies according to the test results.

<Test results are OK>



(1) Click the "Test Option" button to change the test method to "Standard Sequence+Sequential Read Verify" test, then press the "Apply" button.



(2) Return to 6.2(1), and "Drive Login" again to perform the test. Leave the test method (7) unchanged as the method has already been changed in (1).

NOTE:
Testing time varies according to Microdrives. It takes about 15 to 16 minutes to carry out the "Sequence+Sequential Read Verify" test.

<Test results are NG>

(1) Physically format the Microdrive. (Low-level format)

NOTE:
Physical format (Low-level format) is different from the ordinary format (Logical format) which is usually carried out with PCs. Physical format takes considerable time as it rearranges the hard disk sectors.
The arrangement of the sectors sometimes may break up for some reasons (vibrations or heat etc.) In those cases, the test results are NG as the data read/ write are impossible even though the hard disk itself is normal.
It is necessary to physically format the Microdrive once to confirm the Microdrive defect.
The easiest way to perform physical format seems to be DDD CleanDisk.
As mentioned earlier, although the development of DDD had been finished, it can be used for the purpose of physical format.
Commercially available tools that can completely clear disks may also be used.

(2) Format the Microdrive with EVERIO.

NOTE:
Formatting (Logically formatting) the Microdrive with EVERIO optimize the Microdrive format (sector size). If a hard disk is not logically formatted after being physically formatted, it can not either record or playback.

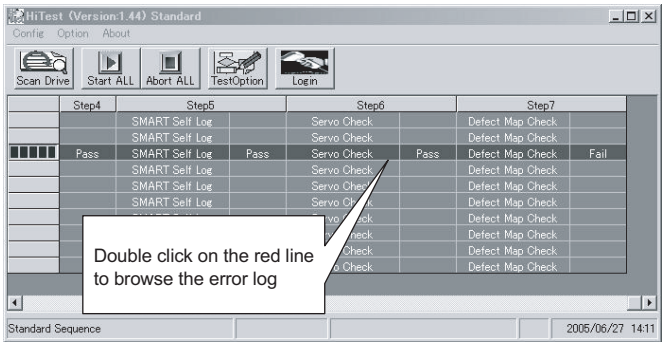
(3) Return to 6.2(1), and "Drive Login" again to perform the test. Select the "Standard Sequence" test.

NOTE:
If the results of the retest show NG, it is identified as Microdrive NG.

6.4 Checking the error log

There are two ways of viewing the error log.

(1) Double click on the line



(2) Refer to "HiTest Dir"

Normally, HiTest program is stored in C:/Program File/HiTest.

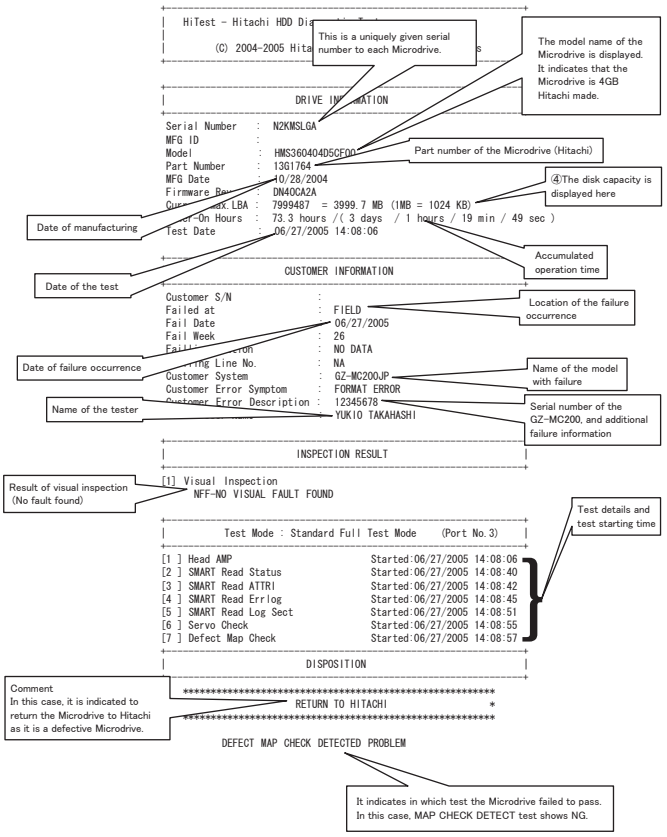
The error log (including the test OK error log) is in DANA in the folder named "log" in the above mentioned C:/Program File/HiTest folder.

There are two files with a serial number as a file name such as "N2J62G6A" and with extensions "blb" and "log".

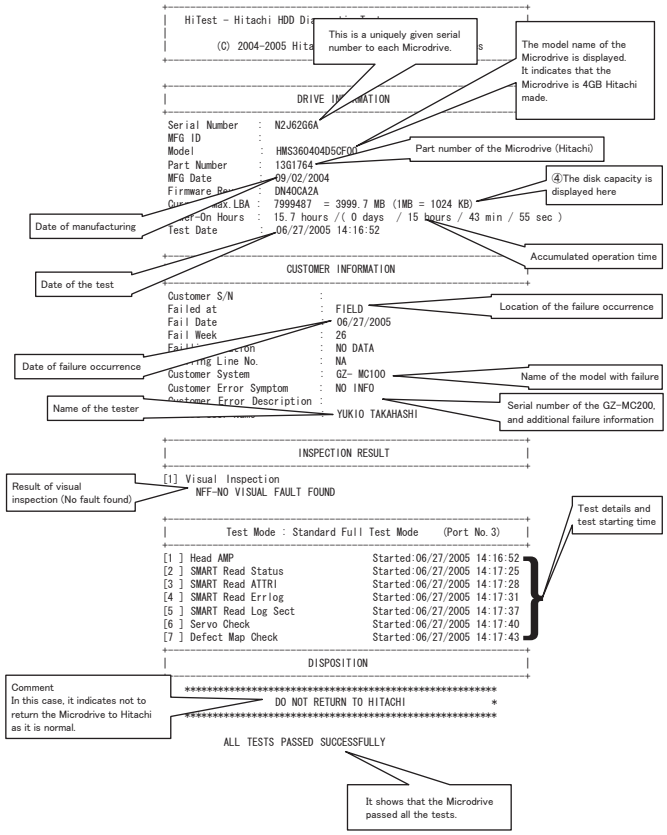
The file with extension "blb" is used for analysis by part manufacturers, so it is not used for checking the error log. JVC uses the data with "log" extension (log data) only.

The log data is text data and can be browsed or printed by using Notepad or WordPad.

LOGS in test NG case


HiTest - Hitachi HDD Dia
(C) 2004-2005 Hita
This is a uniquely given serial number to each Microdrive.
The model name of the Microdrive is displayed. It indicates that the Microdrive is 4GB Hitachi made.
DRIVE INFORMATION
Serial Number : N2KMSLGA
MFG ID :
Model : HMS360404D5CF00
Part Number : 13G1764
MFG Date : 10/28/2004
Firmware Rev. : DN4OCA2A
Cur. Max. LBA : 7999487 = 3999.7 MB (1MB = 1024 KB)
Power-On Hours : 73.3 hours /(3 days / 1 hours / 19 min / 49 sec)
Test Date : 06/27/2005 14:08:06
Part number of the Microdrive (Hitachi)
④The disk capacity is displayed here
Date of manufacturing
Date of the test
Accumulated operation time
CUSTOMER INFORMATION
Customer S/N :
Failed at : FIELD
Fail Date : 06/27/2005
Fail Week : 26
Fail Version : NO DATA
Failing Line No. : NA
Customer System : GZ-MC200JP
Customer Error Symptom : FORMAT ERROR
Customer Error Description : 12345678
Name : YUKIO TAKAHASHI
Location of the failure occurrence
Date of failure occurrence
Name of the model with failure
Name of the tester
Serial number of the GZ-MC200, and additional failure information
INSPECTION RESULT
[1] Visual Inspection
NFF-NO VISUAL FAULT FOUND
Result of visual inspection (No fault found)
Test Mode : Standard Full Test Mode (Port No.3)
[1] Head AMP Started:06/27/2005 14:08:06
[2] SMART Read Status Started:06/27/2005 14:08:40
[3] SMART Read ATTRI Started:06/27/2005 14:08:42
[4] SMART Read Errlog Started:06/27/2005 14:08:45
[5] SMART Read Log Sect Started:06/27/2005 14:08:51
[6] Servo Check Started:06/27/2005 14:08:55
[7] Defect Map Check Started:06/27/2005 14:08:57
Test details and test starting time
DISPOSITION
RETURN TO HITACHI
Comment
In this case, it is indicated to return the Microdrive to Hitachi as it is a defective Microdrive.
DEFECT MAP CHECK DETECTED PROBLEM
It indicates in which test the Microdrive failed to pass. In this case, MAP CHECK DETECT test shows NG.

LOGS in test OK case


HiTest - Hitachi HDD Dia
(C) 2004-2005 Hita
This is a uniquely given serial number to each Microdrive.
The model name of the Microdrive is displayed. It indicates that the Microdrive is 4GB Hitachi made.
DRIVE INFORMATION
Serial Number : N2J62G6A
MFG ID :
Model : HMS360404D5CF00
Part Number : 13G1764
MFG Date : 09/02/2004
Firmware Rev. : DN4OCA2A
Cur. Max. LBA : 7999487 = 3999.7 MB (1MB = 1024 KB)
Power-On Hours : 15.7 hours /(0 days / 15 hours / 43 min / 55 sec)
Test Date : 06/27/2005 14:16:52
Part number of the Microdrive (Hitachi)
④The disk capacity is displayed here
Date of manufacturing
Date of the test
Accumulated operation time
CUSTOMER INFORMATION
Customer S/N :
Failed at : FIELD
Fail Date : 06/27/2005
Fail Week : 26
Fail Version : NO DATA
Failing Line No. : NA
Customer System : GZ- MC100
Customer Error Symptom : NO INFO
Customer Error Description :
Name : YUKIO TAKAHASHI
Location of the failure occurrence
Date of failure occurrence
Name of the model with failure
Name of the tester
Serial number of the GZ-MC200, and additional failure information
INSPECTION RESULT
[1] Visual Inspection
NFF-NO VISUAL FAULT FOUND
Result of visual inspection (No fault found)
Test Mode : Standard Full Test Mode (Port No.3)
[1] Head AMP Started:06/27/2005 14:16:52
[2] SMART Read Status Started:06/27/2005 14:17:25
[3] SMART Read ATTRI Started:06/27/2005 14:17:28
[4] SMART Read Errlog Started:06/27/2005 14:17:31
[5] SMART Read Log Sect Started:06/27/2005 14:17:37
[6] Servo Check Started:06/27/2005 14:17:40
[7] Defect Map Check Started:06/27/2005 14:17:43
Test details and test starting time
DISPOSITION
DO NOT RETURN TO HITACHI
Comment
In this case, it indicates not to return the Microdrive to Hitachi as it is normal.
ALL TESTS PASSED SUCCESSFULLY
It shows that the Microdrive passed all the tests.

2.5 Format

As Windows file system, either FAT16 or FAT32 is used. There is another file system called NTFS, which is used with Windows 2000 and Windows XP.
FAT stands for File Allocation Table and it has been used since the introduction of MS-DOS.
Until the arrival of Windows 95 OSR2, FAT meant FAT16.
When FAT32 appeared, FAT16 and FAT32 are distinguished respectively.
Generally, data and programs are dealt as files in computer related field.
A file system is a function of OS (Operation System) such as Windows.In FAT, files are stored as unit of boxes called clusters in storage (drive) in the premises called a hard disk.
If they are just stored, it is hard to search them afterward.
So the location of each file is written in the ledger (FAT) with the number of each location.
You can see the location of the box (cluster) of certain file if you check with the ledger (FAT).
A ledger (FAT) is allocated to each storage (drive) unit.
The numbers 16 or 32 of FAT16 or FAT32 each indicates 16-bits or 32-bits.
Inside a computer everything is descried in binary numbers.
With FAT16, 16-bits worth: 2 to the 16th power (65536) boxes can be controlled.And with FAT32, 32-bits worth: 2 to the 32nd power (65536×65536) boxes can be controlled.
That is why they are called FAT16 and FAT32.
The size of the boxes (clusters) changes like a balloon in proportion to the capacity of the storage (drive).
However, the original size and the limit of the expansion size are determined: 4K- bytes as minimum and 32K-bytes as maximum.
As it was explained earlier, 65536 boxes (clusters) can be controlled with FAT16.
If the maximum capacity of a box (cluster) is 32K-bytes, the upper limit of the storage(drive) that can be recognized by Windows is 65536~32KB=2G-bytes s.
It means that when a hard disk with more than 2G-bytes s is installed; it is divided into maximum 2G-bytes s with FAT16.

Drive capacity	Cluster size	
	FAT16	FAT32
Less than 256MB	4KB	Same as FAT16
256MB and over - less than 512MB	8KB	
512MB and over - less than 1024MB	16KB	4KB
1024MB and over-less than 2048MB	32KB	
2GB and over - less than 4GB	Can not setting	
4GB and over - less than 8GB		
8GB and over - less than 16GB		8KB
16GB and over - less than 32GB		16KB
32GB and over		32KB

(Table 1) Drive capacity and cluster size

The cluster size does not change how big or how small a file is.
For example, if a 2G-byte drive is used in FAT16 to save a 1K-byte file, one cluster (32K-bytes) is used to write in.
If a 33K-byte file is saved, it is written in on a hard disk using two clusters (64K-bytes). In both cases 31K-bytes is left unused.
It is not necessarily good to minimize the cluster size at all times.
Video and audio data become extremely large files.
If a 2G-byte drive is used in FAT32, normally the cluster size becomes 4K-bytes occupying 2560 clusters to save a 10M-byte file.
When Windows reads the file, it cannot deal the file as one file unless the scattered clusters in the drive are rounded up.
Also, when writing in, the data are stored in each cluster and the clusters should be placed in their original location. It is too inefficient as it takes too much time.
From the above examples the following can be said; 4K-byte cluster size format for comparatively small files such as Windows systems and various programs, 8 to 16 K-byte cluster size format for medium files such as Office documents including MS Word, and 32K-byte cluster size format for large files such as video and audio for efficient disk recording.
Media that are formatted in FAT16(FAT) or FAT32 can be used with EVERIO.EVERIO does not support NTFS.
If a NTFS-formatted medium is inserted into EVERIO, "THIS CARD IS NOT FORMATTED" is displayed.
Originally, Microdrives were developed as mass storage for PC and peripherals, and their main purpose is to store data.
As a result, Microdrives are formatted in FAT32(4K-byte cluster size) as same as other PC and peripherals.
Yet as previously mentioned, the files that are recorded/ read with EVERIO are video/ audio files with enormous file size.
Therefore, it is necessary to be formatted in the maximum 32K-byte cluster size.
If it is formatted with EVERIO, it is automatically formatted in FAT32(32K-byte cluster size)
If it is formatted in FAT32(32K-byte cluster size) with a PC, normally, this special format cannot be done.
If you need to carry out this format with a PC for some reason, input from MS-DOS prompt as follows.
format d: /z:64 (As d: is a Microdrive drive, it differs according to the environment of each PC.)
/z:64 is a special setting for format, meaning that it is formatted in 64sector cluster size (1sector=512-byte)

Numbers of sectors	cluster size
1	512B
2	1KB
4	2KB
8	4KB
16	8KB
32	16KB
64	32KB

(Table 2) Numbers of sectors and cluster size

Besides the Instruction Book, EVERIO comes with a notice sheet that is written "Please read before use".
On the sheet, "Format the provided Microdrive with the format function in the menu" is written.
If the provided Microdrive is not formatted before use, it cannot process the data in the drive efficiently, as explained above, resulting in slow access to the medium, temporary video halt, or media error display.
When a media error is displayed, selecting the CLEAN UP from the menu and performing it can temporarily avoid the error.
However, the media error will be displayed again while using EVERIO.
Therefore, when media error is displayed, make sure to format the Microdrive with EVERIO.
(Please do not forget to backup the user data.)
If the format is done with EVERIO, media with 2G-bytes and less are formatted in FAT16 (64 sectors), and media with 2G-bytes and over are formatted in FAT32 (64 sectors).

2.6 Pict Bridge

GZ-MC100, GZ-MC200 and GZ-MC500 support PictBridge.

PictBridge is a standard that allows direct printing by connecting digital cameras and camcorders to printers.Conventionally, data needed to be stored in a PC before printing pictures and still images taken by digital cameras or camcorders. The actual printing was done by the instruction from the PC.Now direct printing is available by connecting PictBridge supporting devices via USB cables.

Digital cameras or camcorders of other makes have variety of functions that can be controlled on the camera or camcorder side: specify print settings such as sheet sizes, print specified images, Index Printing of a list of all images in scaled-down size, print multiple copies of the same images, and print with date stamps. However GZ-MC100/200/500 can only use the basic required functions and some partial functions of PictBridge. Please refer to the table below for the supporting functions.

Function	Overview	Support
Standard print settings		
Single Image print	Single print of a single image	◎
Multiple Image print	Print multiple images	
DPOF AUTOPRINT	Auto print following DPOF files	○
All image index	Index print of thumbnail-size DPOF images	
All image print	Print all the images within the medium ※DSC images in the image format, of which the printer does not support, are not necessarily output.	
Extended print settings		
Area specified print	Print trimmed images	
Copy print	Multiple print in specified numbers	○
Date stamped print	Print with a shooting date stamp	○
Specified sheet size print	Print with sheet specification	
Fixed size print	Print in specified print size	
N-up layout print	Print multiple copies of the same image on a single sheet	
Print with file names	Print images with file names	
Borderless print	Print pictures without white borders	
Printer status information		
DPS connection setup	Initial sequence of the camera and the printer connection	◎
Printer error notice	Display printer errors on the camera monitor	◎
Error detail notice	Display the printer error detail on the camera monitor	
Printing status notice	Display the printer's printing status on the camera monitor	○
Disconnection permit notice	Display the message to disconnect the cable safely	
Printing complete notice	Display the completion of printing on the camera monitor	
Printer settings		
Print quality specification	Print in specified print quality	
Sheet variety specification	Print in specified sheet variety	
Print job control		
Print cancel from DSC	While printing, request the printer to cancel printing from the camera	○
USB cable cutoff recovery	Re-start printing after DPOF printing was halt due to the cable cutoff	
Printer sheet output recovery	Automatically re-start feeding sheets after paper-out	◎
DSC error recovery	Re-start printing after a disruption due to the printer	○

◎: Basic required functions of PictBridge ○: Workable functions with EVERIO
※Items that are not supported by Extended print settings or Printer settings are printed in default settings of the printer.
Although GZ-MC100/200 are supported by above items, actual available functions depend on the printer function, and the functions that are supported by both the printer and the camera are operable.

Connect EVERIO and the printer in the following procedure.

(1) Set EVERIO in Playback Mode.
(2) Set the MODE lamp to Still image mode, and then select "DIRECT PRINT" in the MENU.
(3) Connect to the printer, and then turn the printer power on.

If EVERIO was connected to the printer before being set to "DIRECT PRINT", it is recognized as mass storage (an external drive) by the printer.The printer does not operate as it does not recognize EVERIO as a PictBridge device.If the printer power was on before the printer is connected to EVERIO, contact noise may be generated.The printer may not operate properly as it does not recognize the connection of the PictBridge device because of the contact noise.

SECTION 3
DISASSEMBLY

3.1 BEFORE ASSEMBLY AND DISASSEMBLY

3.1.1 Precautions

- Be sure to disconnect the power supply unit prior to mounting and soldering of parts.
- Prior to removing a component part that needs to disconnect its connector(s) and its screw(s), first disconnect the wire(s) from the connector(s), and then remove the screw(s).
- When connecting/disconnecting wires, pay enough attention not to damage the connectors.
- When inserting the flat wire to the connector, pay attention to the direction of the flat wire.
- Be careful in removing the parts to which some spacer or shield is attached for reinforcement or insulation.
- When replacing chip parts (especially IC parts), first remove the solder completely to prevent peeling of the pattern.
- Tighten screws properly during the procedures. Unless otherwise specified, tighten screws at a torque of 0.098N·m (1.0kgf·cm). However, as this is a required value at the time of production, use the value as a measuring stick when proceeding repair services. (See "SERVICE NOTE" as for tightening torque.)

3.1.2 Destination of connectors

Two kinds of double-arrows in connection tables respectively show kinds of connector/wires.

⇔ : Flat wire ↔ : Wire ⬌ : Board to board (B-B)
: The connector of the side to remove

CONN. No.	CONNECTOR					PIN No.
CN2a	MAIN	CN101	⇔	MONI BW	CN761	40
CN2b	MAIN	CN103	↔	MINI BW	CN762	10

3.1.3 Disconnection of connectors (Wires)

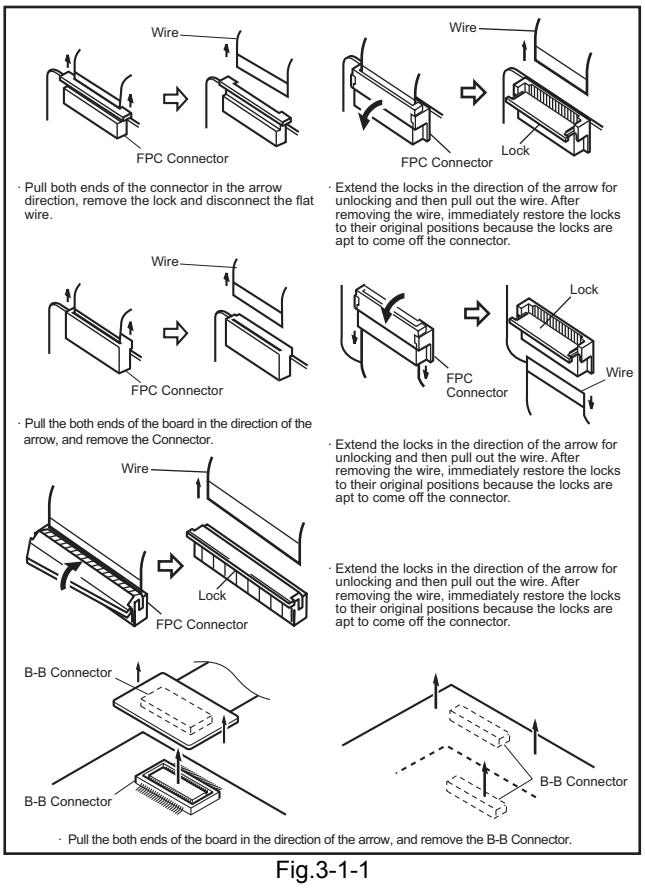

Wire
FPC Connector
· Pull both ends of the connector in the arrow direction, remove the lock and disconnect the flat wire.
Wire
Lock
FPC Connector
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
Wire
FPC Connector
· Pull the both ends of the board in the direction of the arrow, and remove the Connector.
Lock
FPC Connector
Wire
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
Wire
Lock
FPC Connector
· Extend the locks in the direction of the arrow for unlocking and then pull out the wire. After removing the wire, immediately restore the locks to their original positions because the locks are apt to come off the connector.
B-B Connector
B-B Connector
B-B Connector
· Pull the both ends of the board in the direction of the arrow, and remove the B-B Connector.

Fig.3-1-1

3.1.4 Tools required for disassembly and assembly

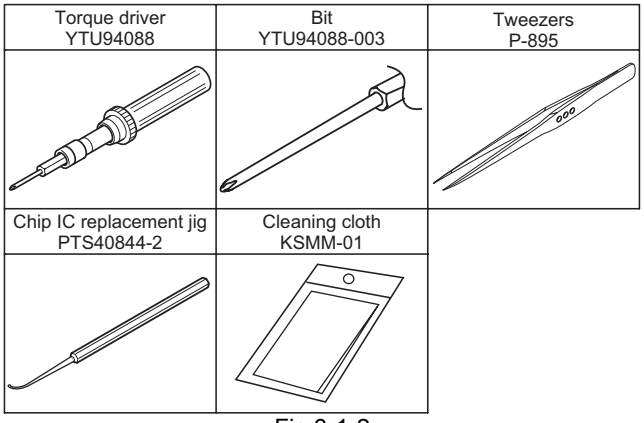


Fig.3-1-2

- **Torque driver**
  Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
- **Bit**
  This bit is slightly longer than those set in conventional torque drivers.
- **Tweezers**
  To be used for removing and installing parts and wires.
- **Chip IC replacement jig**
  To be used for replacement of IC.
- **Cleaning cloth**
  Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

3.2 ASSEMBLY AND DISASSEMBLY OF MAIN PARTS

3.2.1 Assembly and disassembly

When reassembling, perform the step(s) in reverse order.

STEP No.	PART	Fig. No.	POINT	NOTE
[1]	TOP COVER ASSY	C1	4(S1a), 3(L1a),CN1a	-
[2]	UPPER ASSY (Inc. VF ASSY, SPEAKER/MONITOR)	C2-1	(S2a),2(S2b),3(S2c) 2(SD1a), L2,CN2a,b	-
[8]	E.VF UNIT(B/W)	C2-2	2(S8),L8,CN8a	NOTE 8
(*1)	(*2)	(*3)	(*4)	(*5)

(*1) Order of steps in Procedure
When reassembling, preform the step(s) in the reverseorder. These numbers are also used as the identification (location) No. of parts Figures.
(*2) Part to be removed or installed.
(*3) Fig. No. showing Procedure or Part Location.
(*4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.
S = Screw L = Lock, Release, Hook
SD = Solder CN = Connector

[Example]

- 4 (S1a) = Remove 4 S1a screws.
- 3 (L1a) = Disengage 3 L1a hooks.
- 2 (SD1a) = Unsolder 2 SD1a points.
- CN1a = Remove a CN1a connector.

(*5) Adjustment information for installation.

3.2.2 ASSEMBLY/DISASSEMBLY OF CABINET PARTS AND ELECTRICAL PARTS

●Disassembly procedure

STEP No.	PART NAME	Fig. No.	POINT	NOTE
[1]	GRIP LOWER ASSY	FA1	HOOD ASSY,2(S1a),2(S1b)	NOTE1a,b
[2]	COVER(FR.) ASSY	FA2	S2a,S2b,2(S2c),S2d	NOTE2a,b,c
[1]	GRIP LOWER ASSY	FA3-1	2(S1c),L1a, L1b,CN1a,b	NOTE1c,d
[3]	TRIPOD	FA3-2	2(S3)	-
[4]	BATT. CASE ASSY	FA3-3	3(S4),SPACER	NOTE4a,b
[5]	COVER(TOP)	FA4	S5a,S5b,2(S5a),L5	NOTE5
[6]	REG BOARD ASSY	FA5-1	SPACER	NOTE6a,b
		FA5-2	SPACER,CN6a,b,2(S6),CN6c,L6,d,e,f,g,h	NOTE6c
		FA5-3	-	NOTE6d,e,f
[7]	CF ASSY	FA6	2(S7a),S7b,CN7a,b,L7a,b	NOTE7a,b
[8]	PLATE(ROTALY)	FA7-1	3(S8)	NOTE8
		FA7-2	-	NOTE8
[9]	MONITOR ASSY	FA8	3(S9)	NOTE9
[10]	CAMERA ASSY		-	-

NOTE1a:
When removing the COVER(FR.)ASSEMBLY, remove the SCREW (1-4) first for the smooth removal of other parts.

NOTE1b:
When removing, remove the four SCREWS (1-4) first to avoid damage or deformation of the ARM (COVER) ASSEMBLY and the STAY (COVER) ASSEMBLY.
During the procedure, be careful with opening and closing of the BATTERY/ CF CARD COVER.
Also, be careful not to damage the parts with the ARM (COVER) ASSEMBLY or the STAY (COVER) ASSEMBLY.

NOTE1c:
Be careful in handling the SPACER.
Attach the SPACER to adjust the edge of CN302.

NOTE1d:
When attaching, be careful not to pinch the WIRE.
Pay special attention on the inside of the TRIPOD and the BATTERY wiring.

NOTE2a:
Although the illustration shows the battery/ CF card cover closed, leave the cover open during the actual procedure.

NOTE2b:
When removing the COVER(FR.)ASSEMBLY, remove the SCREW (8,9) first for the smooth removal of other parts.

NOTE2c:
When removing, be careful not to lose the SHAFT(BELT).

NOTE4a:
When attaching, be careful with the position of the FPC.

NOTE4b:
During the procedure, be careful in handling the WIRE.

NOTE5:
When removing, be careful not to lose the part.

NOTE6a:
During the procedure, be careful not to damage the CONNECTOR or cut/break the WIRE.

NOTE6b:
When removing, be careful in handling the SPACER.

NOTE6c:
Be careful with the wiring and the affixing the SPACER.

NOTE6d:
When attaching, be sure to place the FPC WIRE inside.

NOTE6e:
When attaching, lift the part (ARM) upward.

NOTE6f:
During the procedure, be careful not to deform the part (ARM) or damage other parts.

NOTE7a:
Be careful with the positions of the SCREWS that are to be removed.

NOTE7b:
During the procedure, be careful with the grease.

NOTE8:
When attaching, be careful with the wiring,

●Destination of connectors

CN.NO.	CONNECTOR					PIN NO.
CN1a	REG	CN305	⇔	OPE3	-	6
CN1b	REG	CN307	↔	BATT_TERM	-	6
CN6a	REG	CN301	↔	ANALOG	CN206	10
CN6b	REG	CN302	↔	ANALOG	CN207	27
CN6c	REG	CN309	↔	CF	CN9904	20
CN6d	REG	CN303	↔	ANALOG	CN208	30
CN6e	REG	CN306	↔	LCD-SUB	CN7802	30
CN6f	REG	CN310	↔	CF SW	-	2
CN6g	REG	CN304	⇔	OPE2	-	12
CN6h	REG	CN308	↔	CDS, DIGITAL	CN5103,103	11/4,7
CN7a	CF	CN9901	↔	DIGITAL	CN9801	27
CN7b	CF	CN9902	↔	DIGITAL	CN9802	27

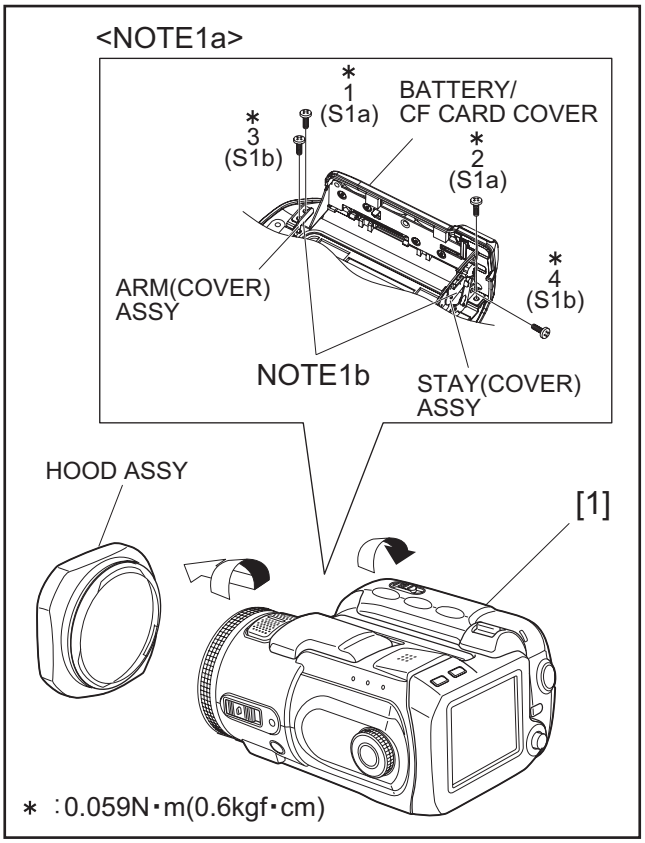


Fig.FA1

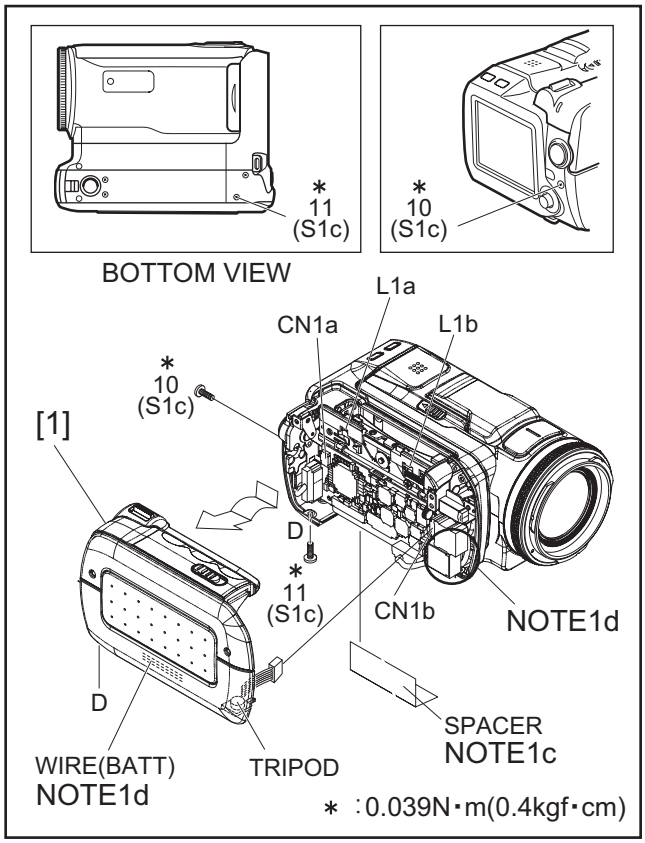


Fig.FA3-1

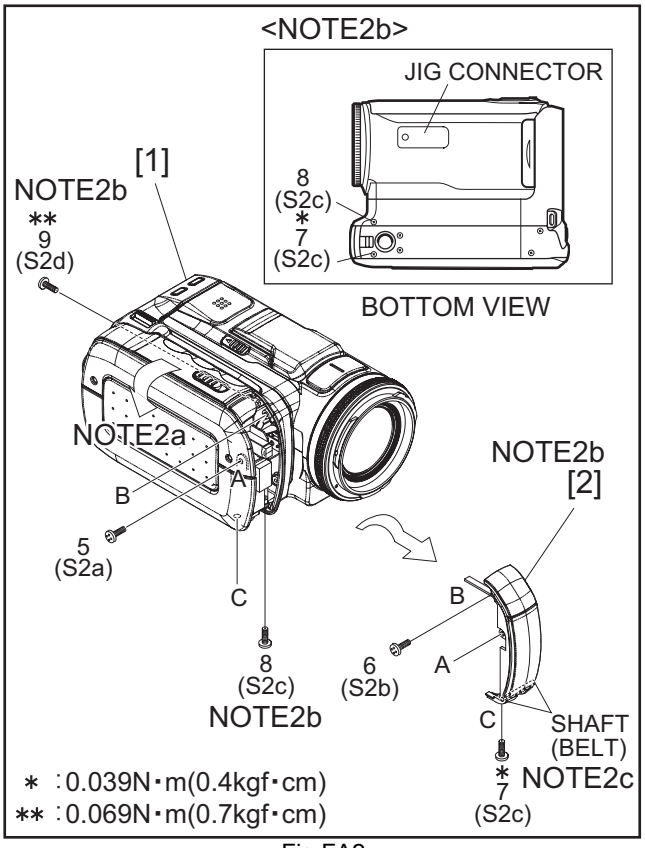


Fig.FA2

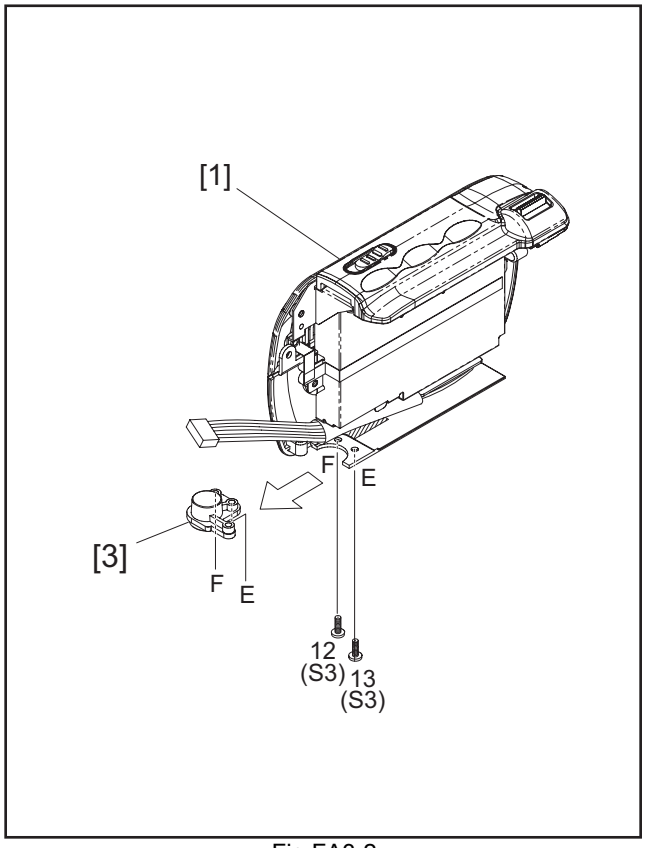


Fig.FA3-2

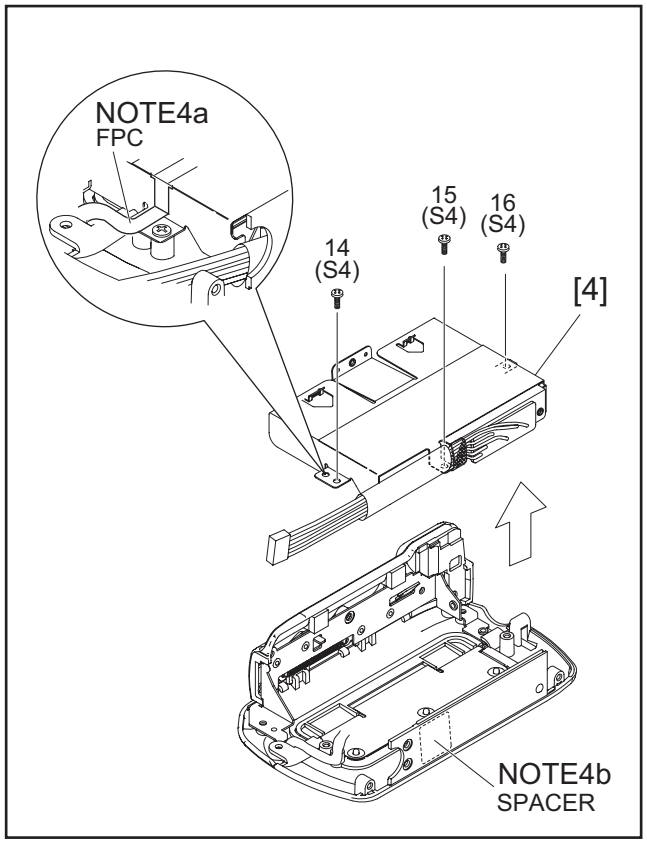


Fig.FA3-3

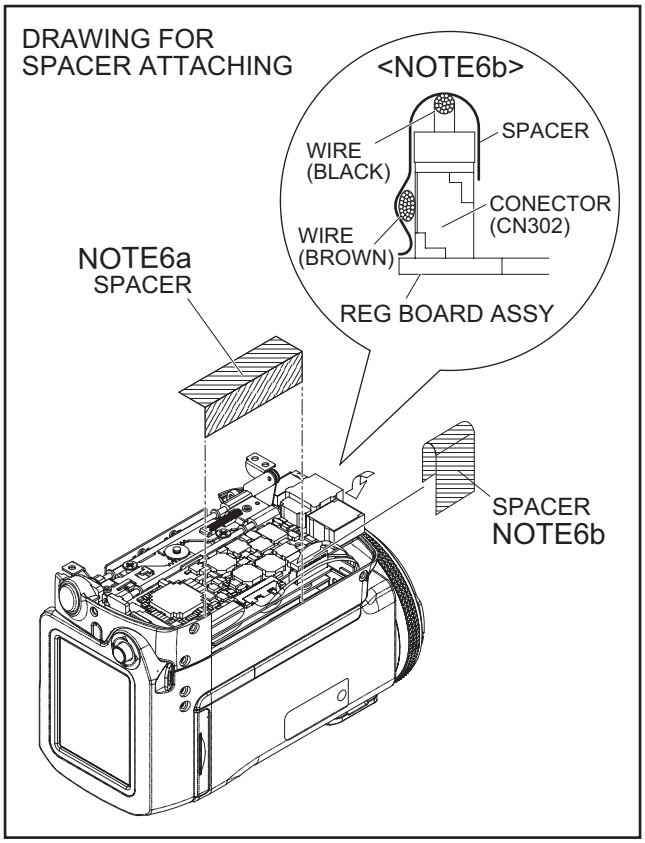


Fig.FA5-1

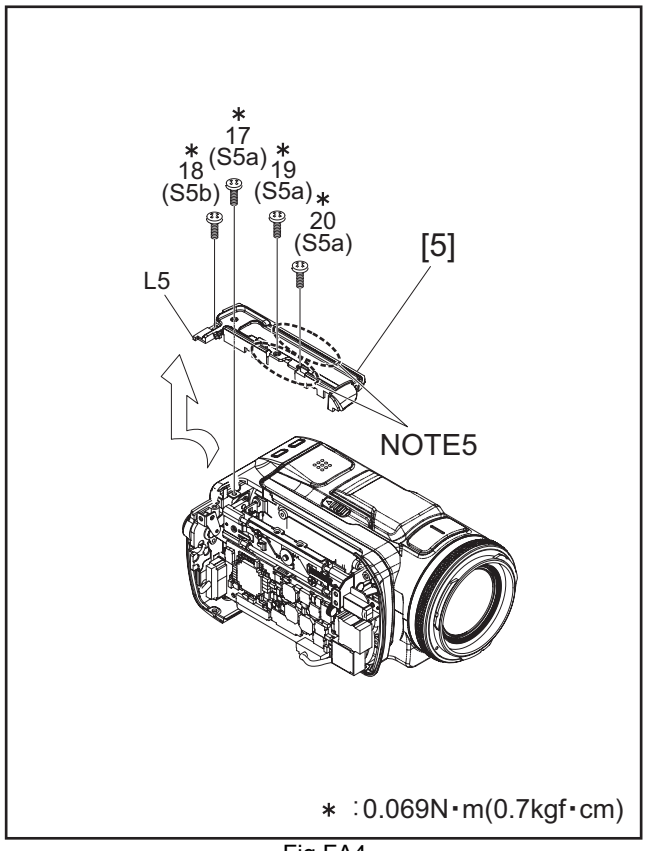


Fig.FA4

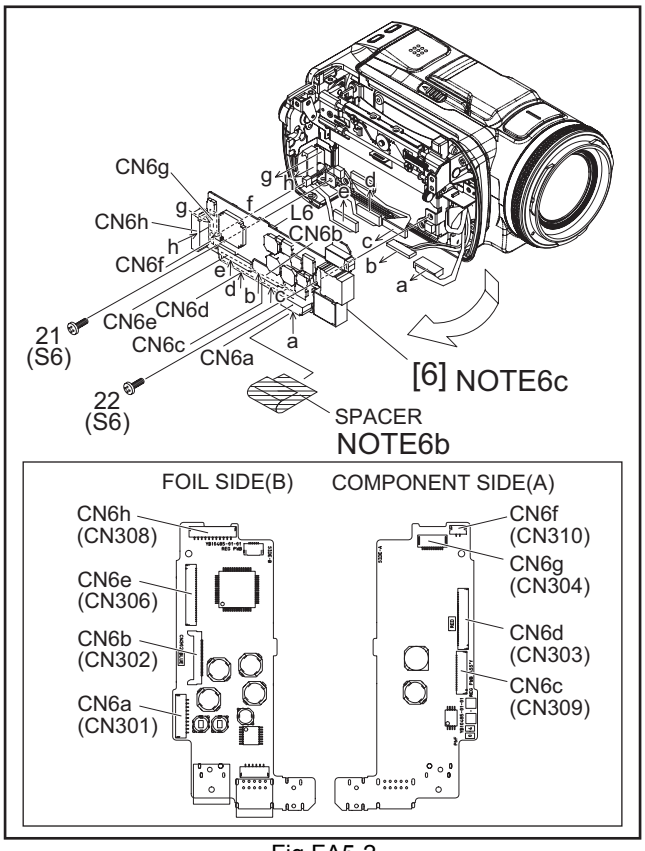


Fig.FA5-2

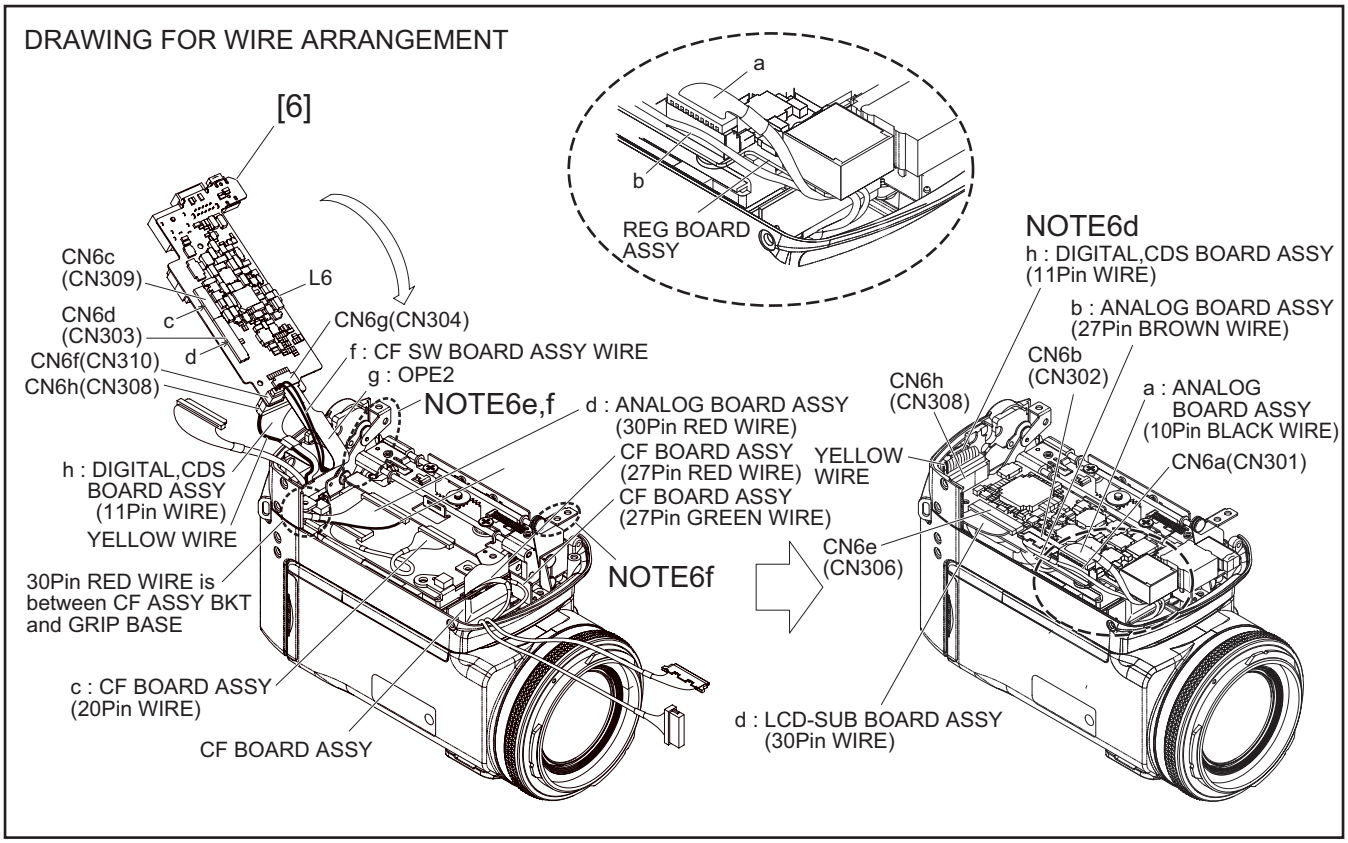


Fig.FA5-3

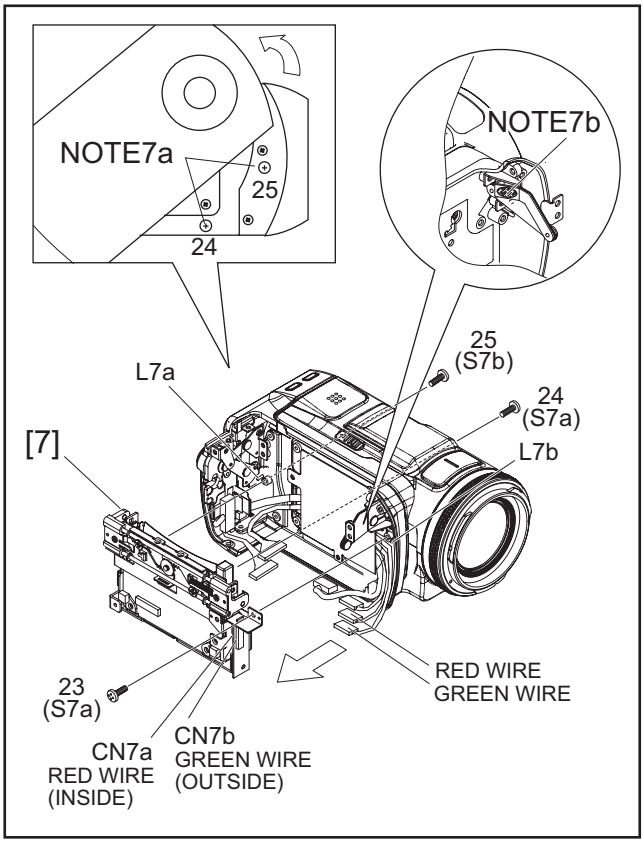


Fig.FA6

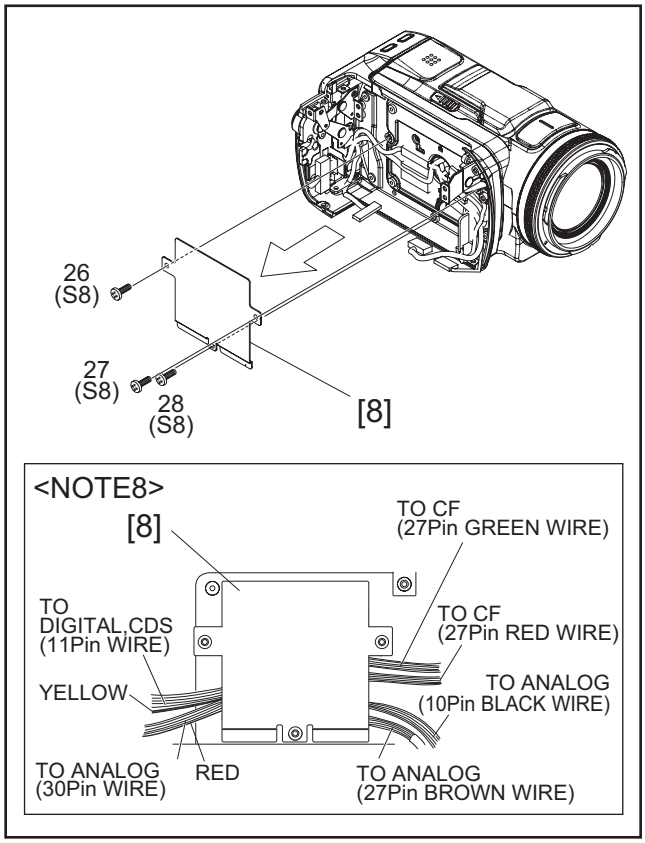


Fig.FA7-1

DRAWING FOR WIRE ARRANGEMENT
<NOTE8>

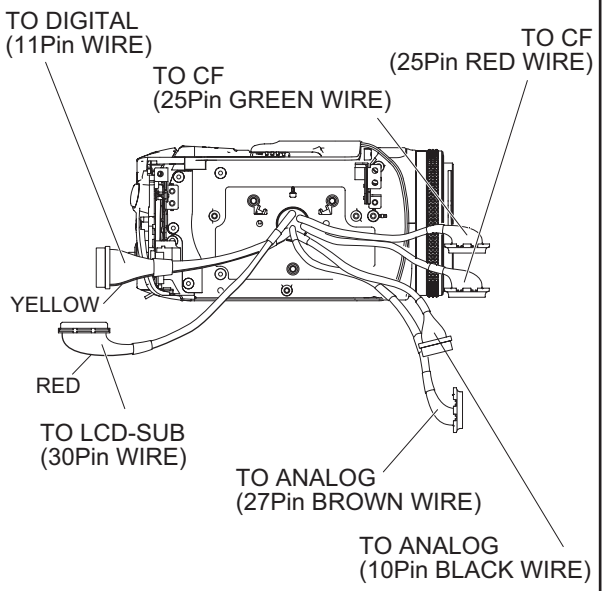


Fig.FA7-2

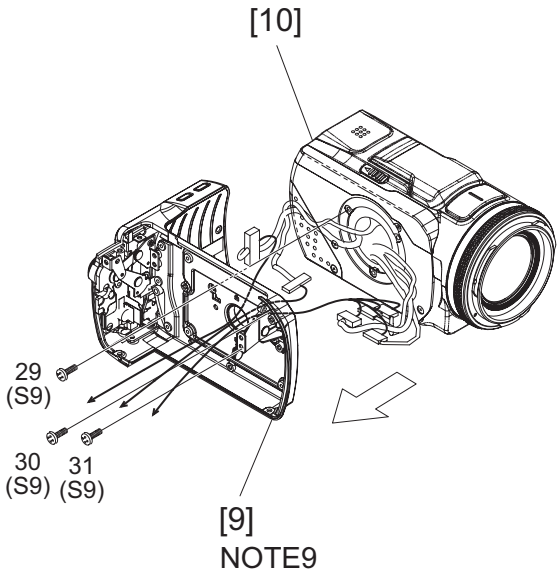


Fig.FA8

3.2.3 ASSEMBLY of [9]MONITOR ASSEMBLY

●Disassembly procedure

STEP No.	PART NAME	Fig. No.	POINT	NOTE
[1]	GRIP BASE	MO1	SPACER,3(S1)	NOTE1a,b
[2]	ROTALY UNIT		4(S2)	-
[3]	COVER(MONI) ASSY	MO2	SHIELD(MONI), 2(S3)	NOTE3
[4]	LCD MODULE &	MO3-1	SPACER, 2(S4a)	NOTE4a,b
	LCD-SUB BOARD ASSY	MO3-2	S4a,3(S4b)	NOTE4c,d
		MO3-3	CN4,SD4a,SD4b	NOTE4e,f
		MO3-4	-	

NOTE1a:
During the procedure, be careful not to damage the parts.

NOTE1b:
When removing, be careful not to cut or break the wire.

NOTE3:
When attaching, be careful with the SHIELD(MONI).

NOTE4a:
When attaching, be careful with the FPC.

NOTE4b:
When removing, peel off the SPACER and lift the FPC to make space.

NOTE4c:
When removing, be careful not to cut or break the wire.

NOTE4d:
Remove the LCD MODULE with the LCD-SUB BOARD as they are soldered together.

NOTE4e:
Refer to the Fig. MO3-3 for attaching the LCD MODULE and LCD-SUB BOARD ASSEMBLY.

NOTE4f:
Refer to the Fig. MO3-4 for the wiring and the SPACER affix position.

●Destination of connectors

CN.NO.	CONNECTOR					PIN NO.
CN4	LCD SUB	CN7801	⇔	LCD MODULE	-	24

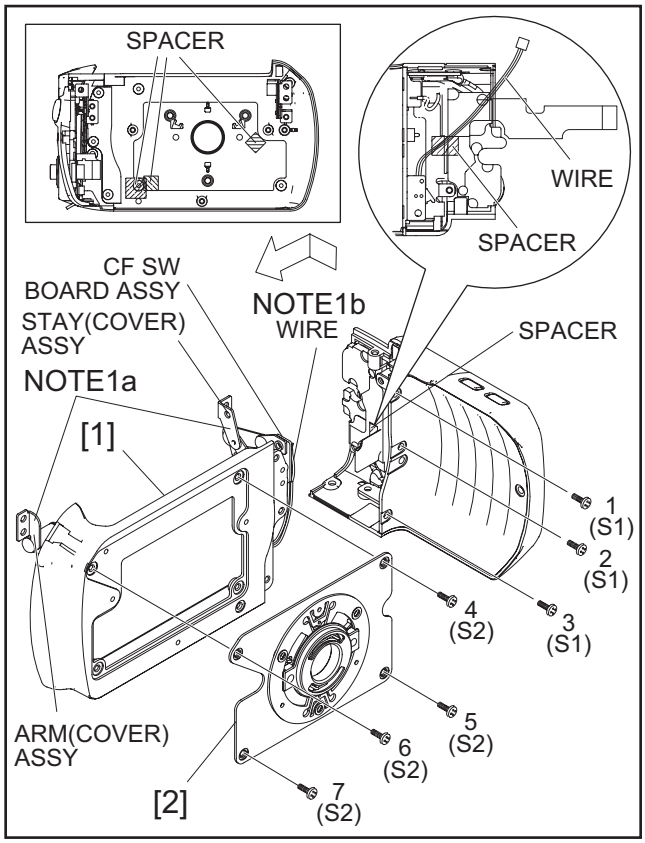


Fig.MO1

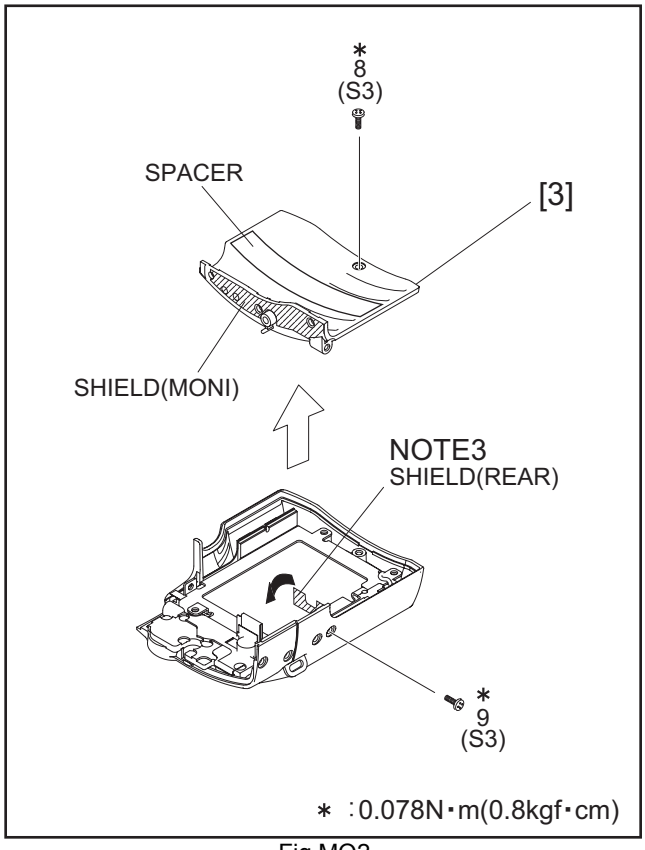


Fig.MO2

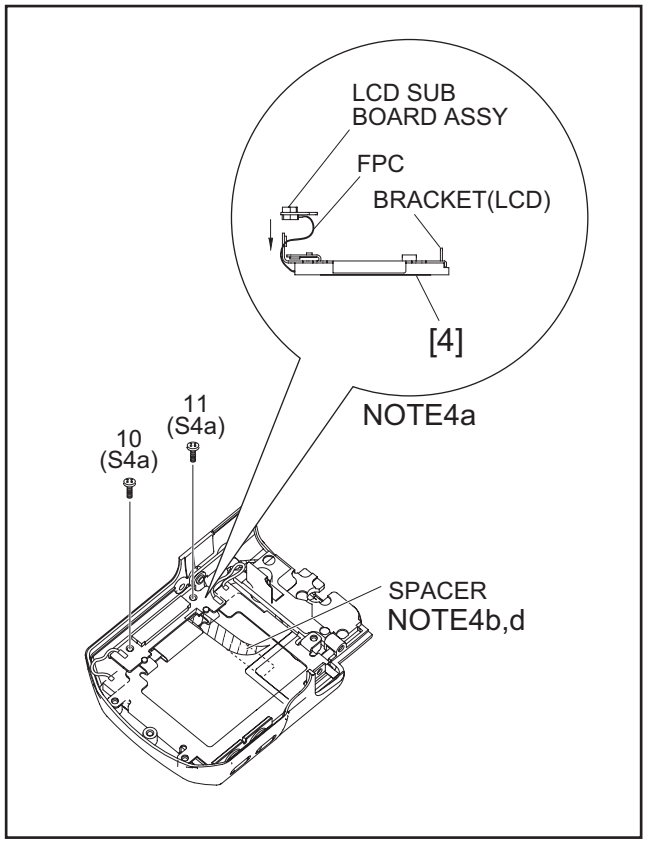


Fig.MO3-1

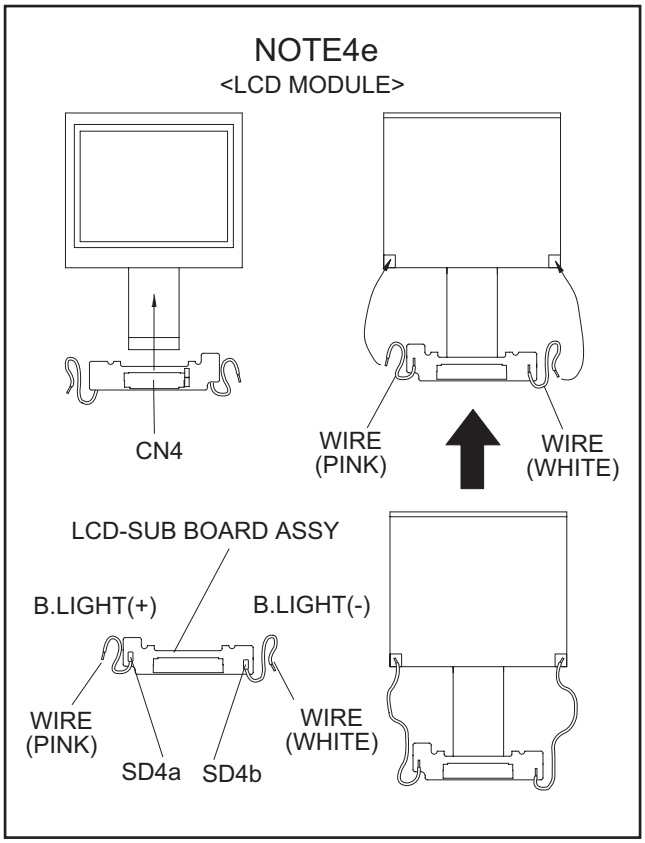


Fig.MO3-3

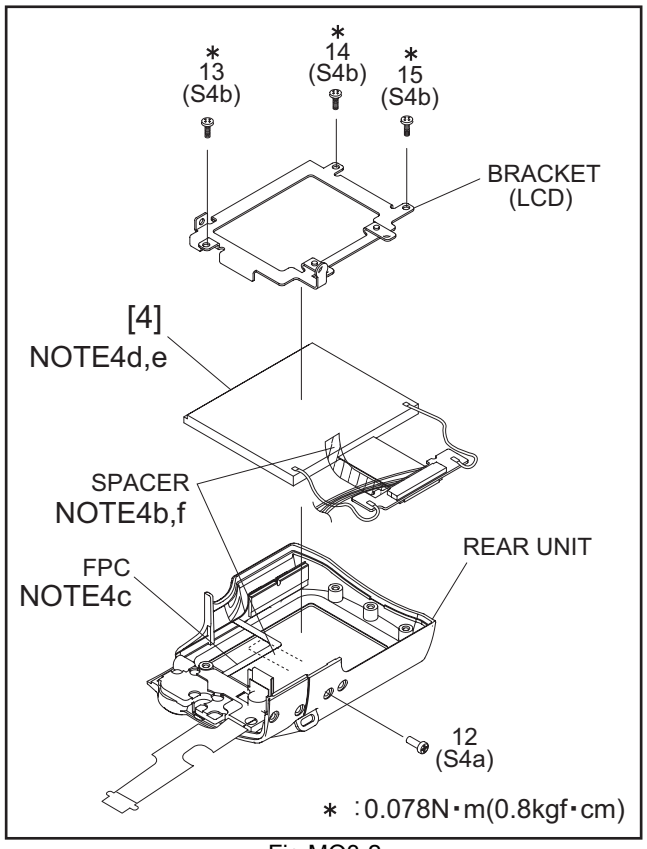


Fig.MO3-2

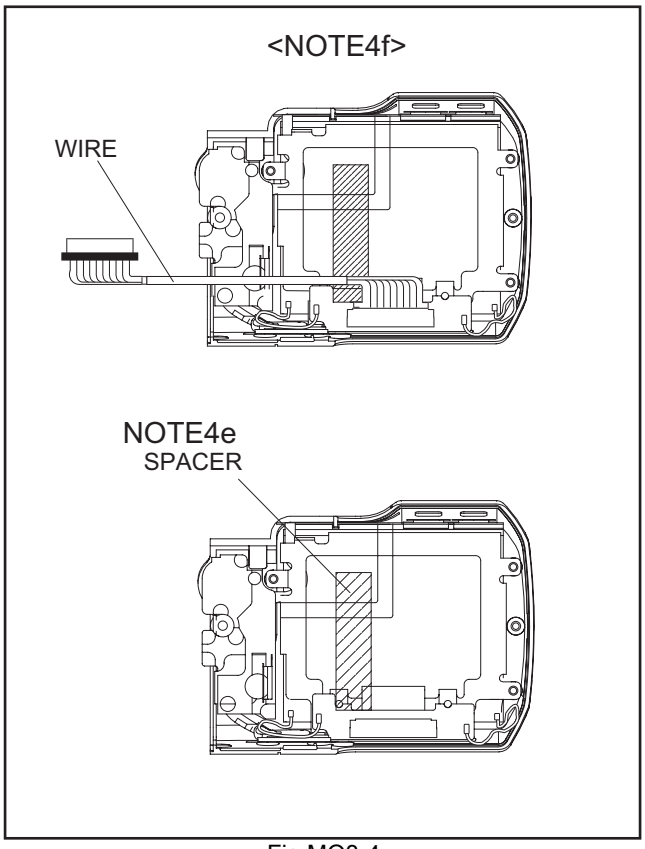


Fig.MO3-4

3.2.4 ASSEMBLY of [10]CAMERA ASSEMBLY AND OP FRAME ASSEMBLY

●Disassembly procedure

STEP No.	PART NAME	Fig. No.	POINT	NOTE
[1]	JOINT CASE ASSY	C1	S1a,S1b,S1c,S1b	NOTE1
[2]	LOWER CASE(OP) ASSY	C2	5(S2)	NOTE2a,b
[3]	COVER(POW) ASSY	C3	S3	-
[4]	UPPER CASE(OP) ASSY	C3,C4-1	S4,CN4a,b,c,d	NOTE4
[5]	POWER UNIT	C4-2	4(S5),L5a,L5b,SPACER	NOTE5
[6]	STROBE UNIT	C4-3	5(S6)	NOTE6a,b
[7]	SPEAKER		SPACER, 2(S7), PLATE(SPK)	NOTE7
[8]	MIC		SPACER, 2(S8),COVER(MIC)	NOTE8a,b
[9]	DIGITAL BOARD ASSY	C5	S9,CN9a,b,c	NOTE9
[10]	ANALOG BOARD ASSY	C6	CN10a,2(S10),CN10b	NOTE10
[11]	OP FRAME ASSY		-	-

NOTE1:
When removing, be careful not to damage the CONNECTOR or cut/break the WIRE.

NOTE2a:
When removing the screw No.5,6, leave the COVER(POW) open.

NOTE2b:
Remove the SD Card prior to other removing procedure.

NOTE4:
When attaching, be careful with the wiring.

NOTE5:
When attaching, be careful with the position of the FPC.

NOTE6a:
Be careful with an electric shock.

NOTE6b:
Replace the entire STROBE UNIT as it is not a subject of service.

NOTE7:
Be careful in wiring.

NOTE8a:
Do not disassemble the MIC ASSEMBLY if it is not necessary, as MIC ASSEMBLY is not designed to be assembled/disassembled easily.
Pay special attention in handling the COVER (MIC).

NOTE8b:
Be careful in wiring.

NOTE9:
When attaching, be careful with the wiring.

NOTE10:
When attaching, place the 7pin wire under the OP FRAME ASSEMBLY.

●Destination of connectors

CN.NO.	CONNECTOR					PIN NO.
CN4a	ANALOG	CN209	⇔	OPE1	-	20
CN4b	ANALOG	CN205	↔	STROBE UNIT	-	12
CN4c	ANALOG	CN201	↔	MIC	-	4
CN4d	ANALOG	CN202	↔	SPEAKER	-	2
CN5a	DIGITAL	CN102	⬌	ANALOG	CN203	110
CN5c	DIGITAL	CN103	↔	CDS	CN5003	7/4
CN5b	DIGITAL	CN101	⇔	CDS	CN5102	51
CN6a	ANALOG	CN204	⇔	OP BLOCK	-	33
CN6b	ANALOG	CN211	⇔	M.FOCUS	-	6

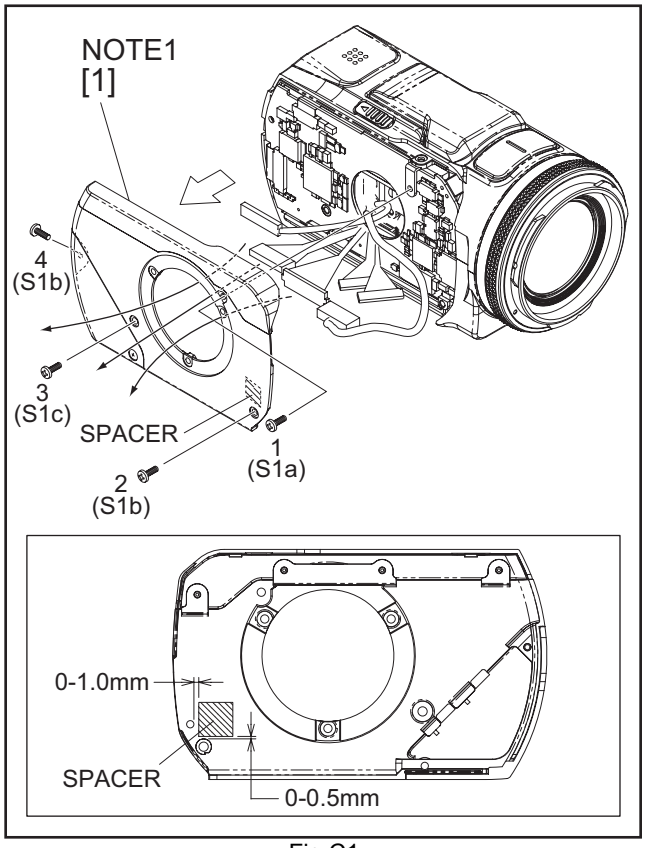


Fig.C1

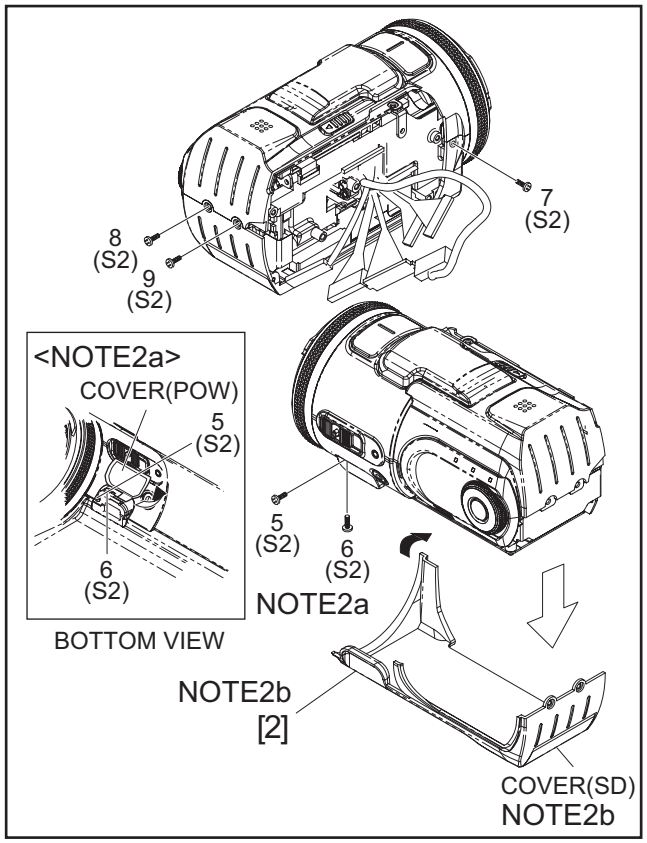


Fig.C2

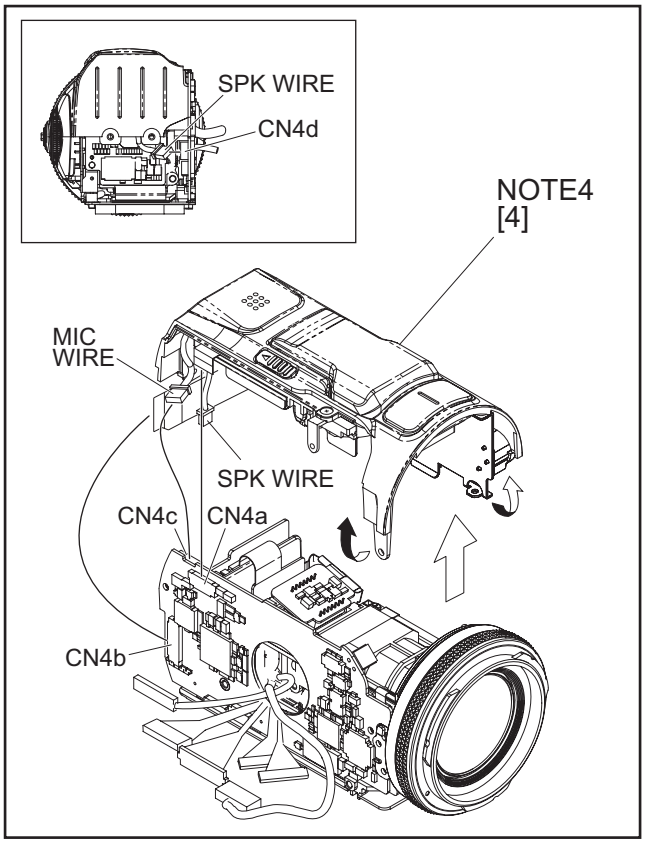


Fig.C4-1

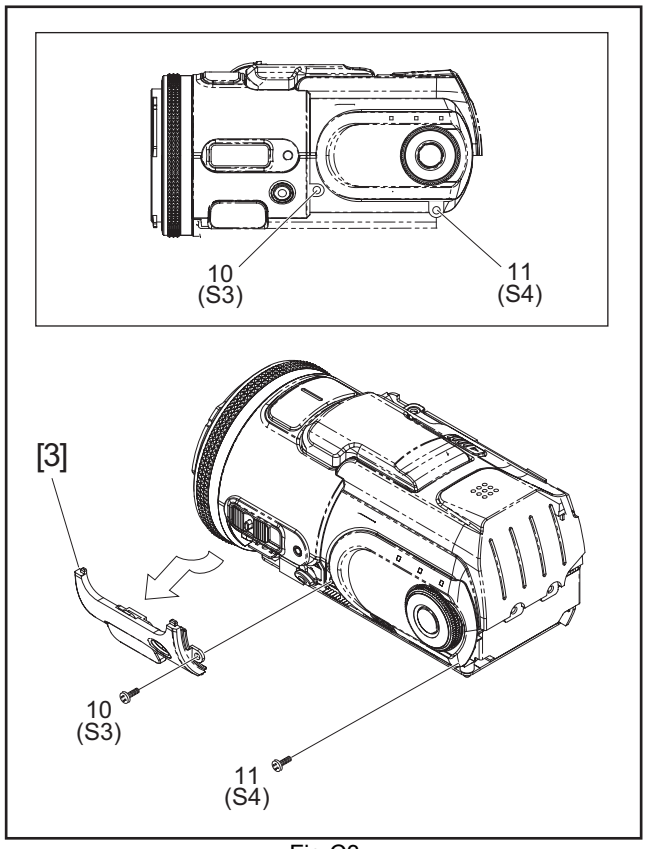


Fig.C3

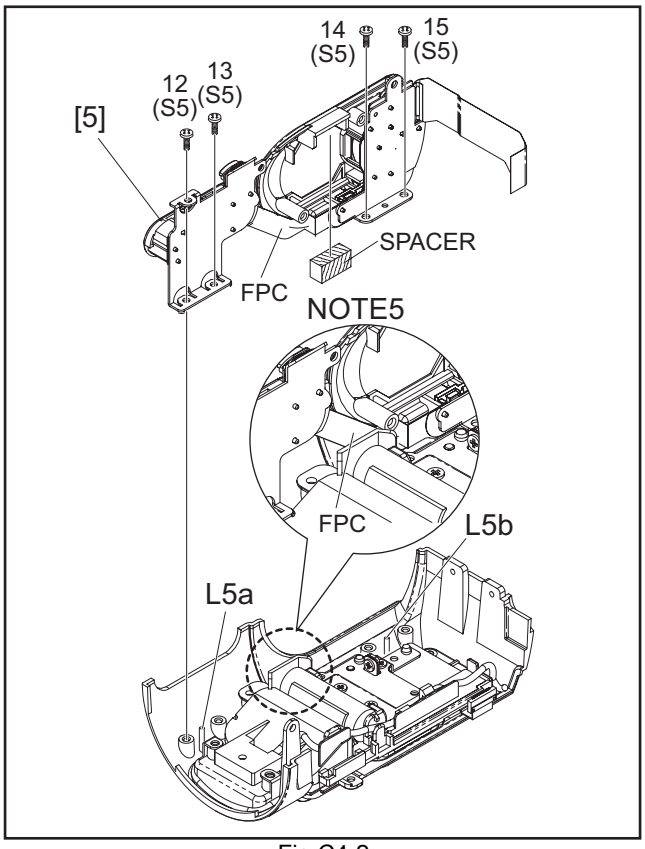


Fig.C4-2

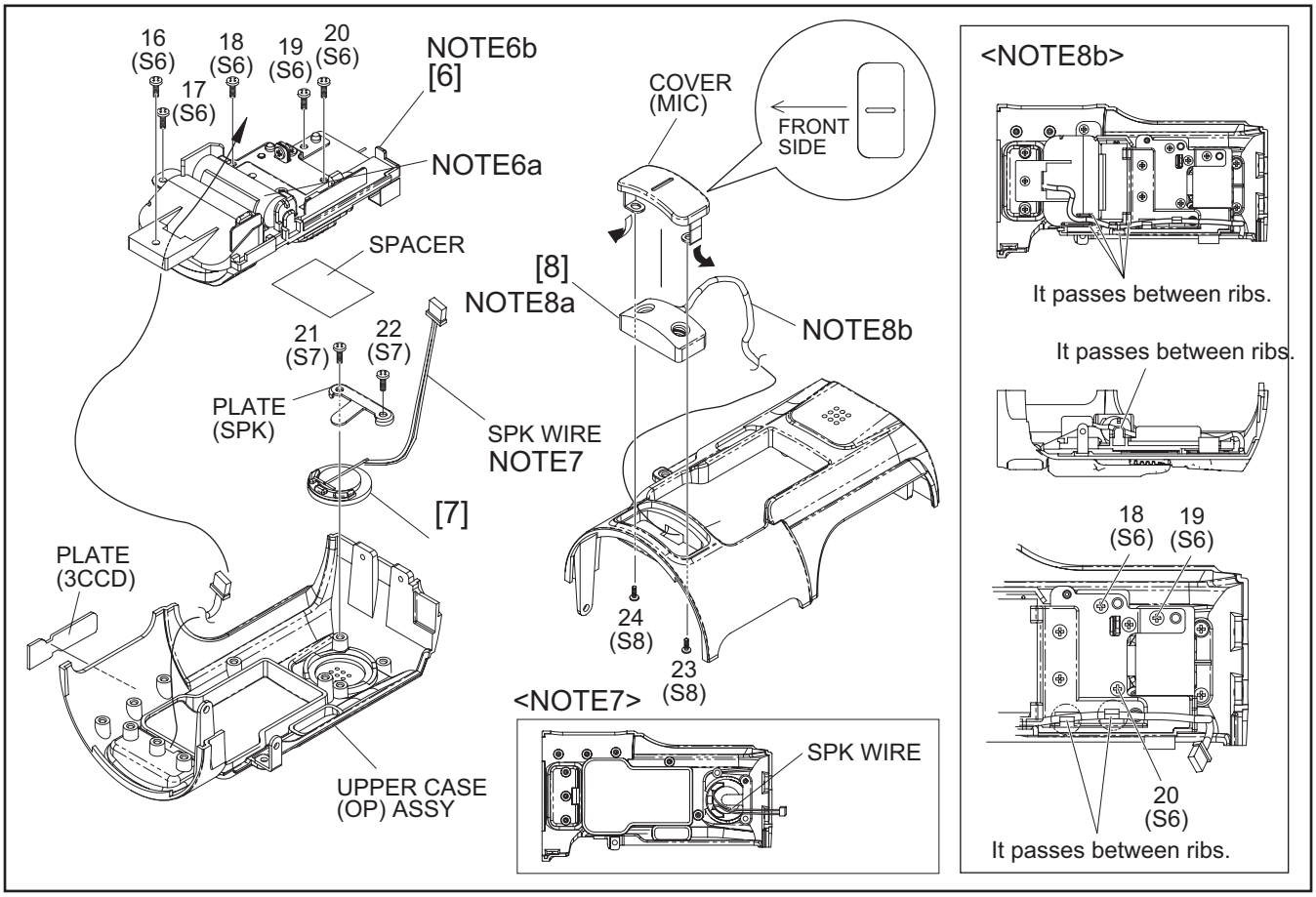


Fig.C4-3

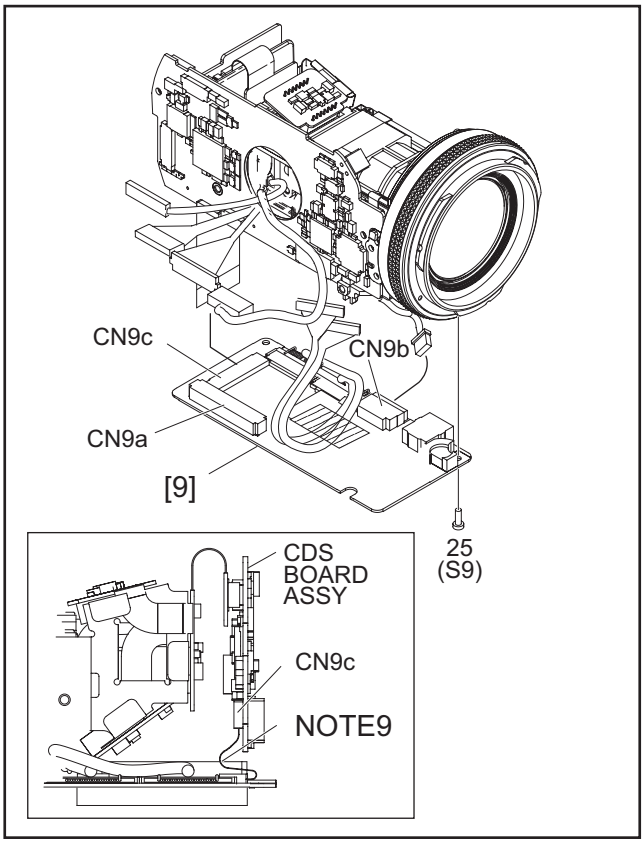


Fig.C5

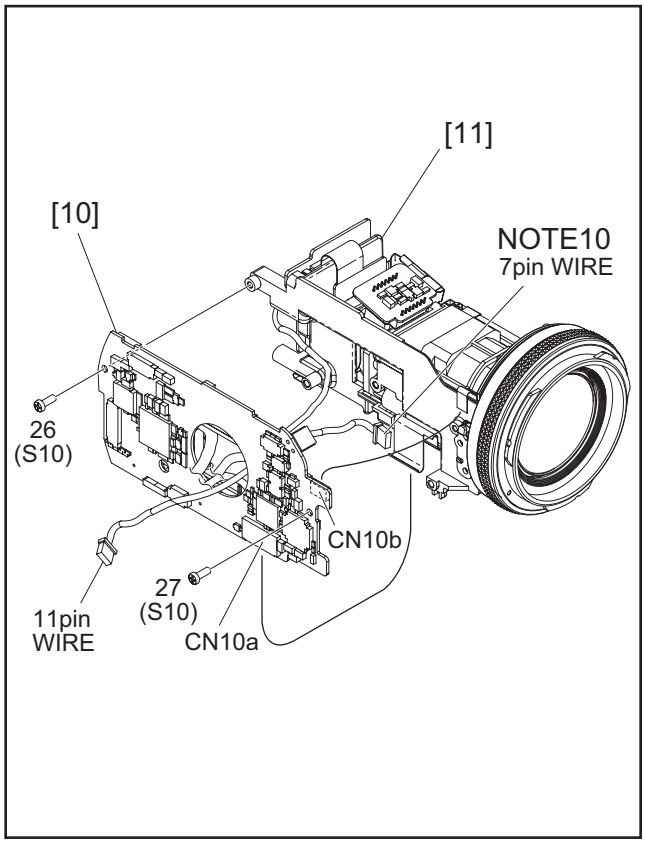


Fig.C6

3.2.5 DISASSEMBLY of [11] OP BLOCK ASSY/CCD BOARD ASSY

●CAUTIONS

(1) Since the OP BLOCK on this model is more complicated in structure than previous OP BLOCKS, pay extra attention to external shocks and vibrations.

(2) During the procedure, be careful in handling the CCD IMAGE SENSOR, OP LPF and the LENS etc. Pay extra attention to the soil, dust and scratch on the surface.
If fingerprints are left on the screen, wipe them with clean chamois leather or a cleaning cloth.

●Disassembly procedure of OP BLOCK ASSEMBLY/CCD BOARD ASSEMBLY

(1) Remove the HOOD and the OP FRAME ASSEMBLY first, before disassembling the OP BLOCK ASSEMBLY.

(2) Remove the two screws (1,2) and connector (CN11a), then remove the CDS BOARD ASSEMBLY.

NOTE11a:
When removing, take out the WIRES prior to other procedure.

NOTE11b:
When attaching, be careful with the wiring.

(3) Remove the screw (3), and then remove the JOINT PLATE

(4) Remove the two screws (4,5), and then remove the FOCUS RING ASSEMBLY.

(5) Remove the two screws (6-8), and then remove the OP FRAME ASSEMBLY.

NOTE11c:
When attaching, be careful with the GASCKET.

(6) Remove the two screws (9, 10), then remove the CCD BOARD ASSEMBLY and the HEAT SINK (CCD) at the same time.

NOTE11d:
When replacing the CCD IMAGE SENSOR, unsolder the fourty two soldered parts (SD11a), and remove the CCD BASE ASSEMBLY from the CCD BOARD ASSEMBLY.
Replace the CCD IMAGE SENSOR as a CCD BASE ASSEMBLY, not as a single part replacement.

NOTE11e:
When attaching, firmly attach the HEAT SINK to the HEAT SHEET with screws.

(7) Remove the three screws (11-13), and then remove the PRISM ASSY.

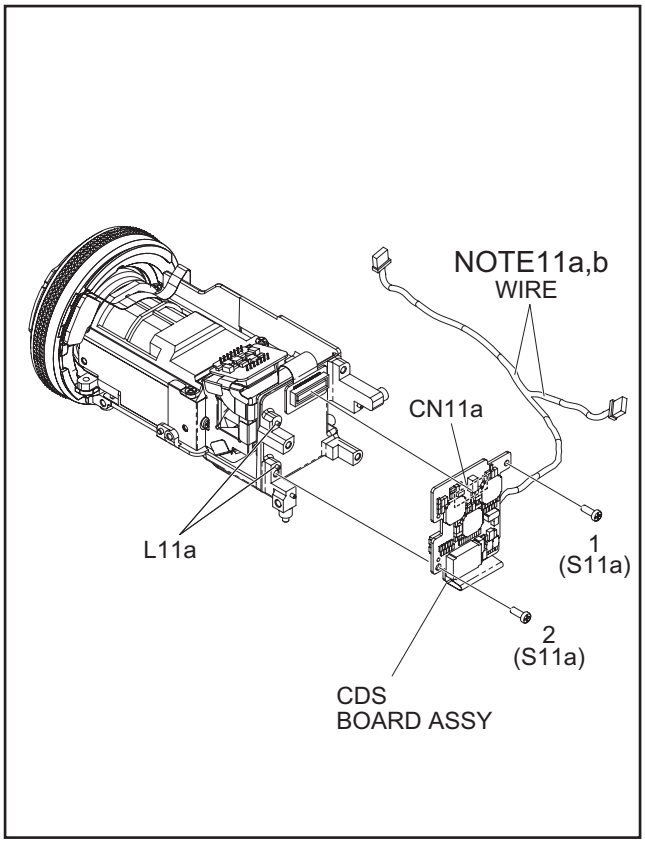


Fig.OP1

●Replacing service repair parts

The service repair parts of the OP BLOCK ASSEMBLY are as follows.
When replacing the parts, pay special attention not to break the FPC, or not to damage the parts by soldering (overheat).

(1) FOCUS MOTOR UNIT

(2) ZOOM MOTOR UNIT

(3) AUTO IRIS UNIT

NOTE11f:
When replacing the FOCUS MOTOR or the ZOOM MOTOR, space the FPC approximately 1 mm above from the jack and then solder it (SD11b).

NOTE11g:
When assembling, make sure to interlock the slide part of the OP BLOCK properly to the axis of the ZOOM MOTOR.

NOTE11h:
When removing the IRIS MOTOR UNIT, fully pull the slide part which is interlocked to the axis of the FOCUS MOTOR to the CCD side.

NOTE11j:
IRIS MOTOR UNIT includes the FPC ASSEMBLY and the SENSOR x 2.

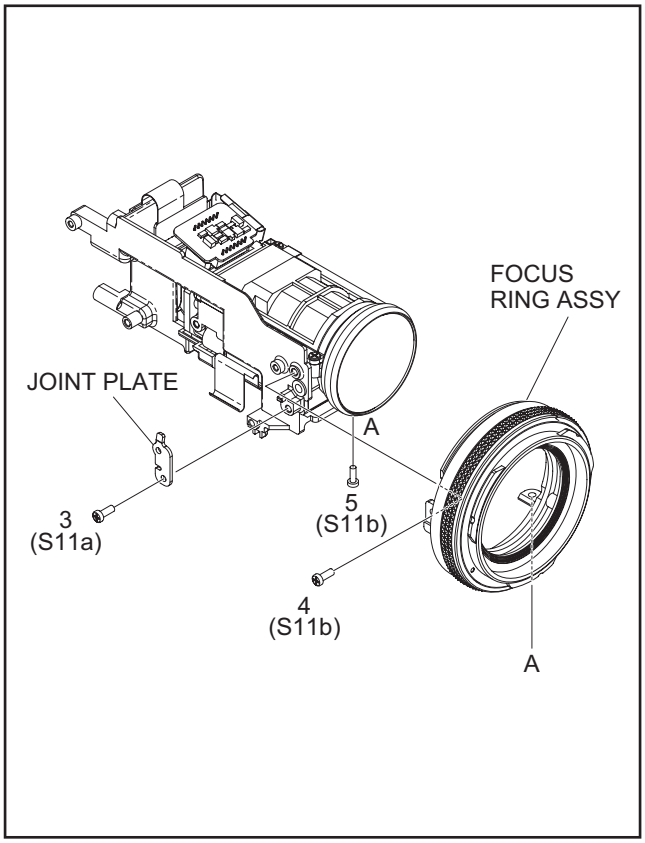


Fig.OP2

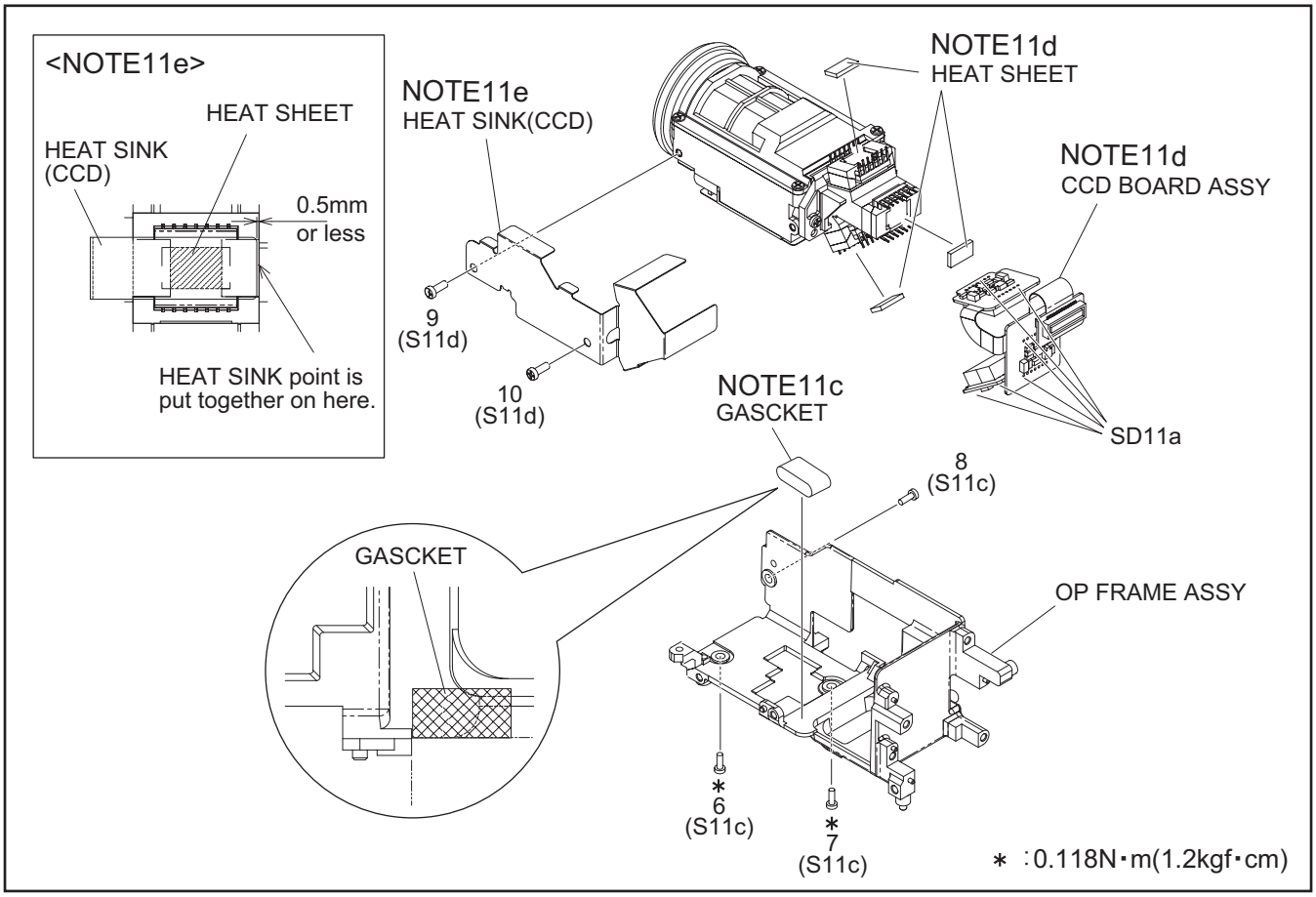


Fig.OP3

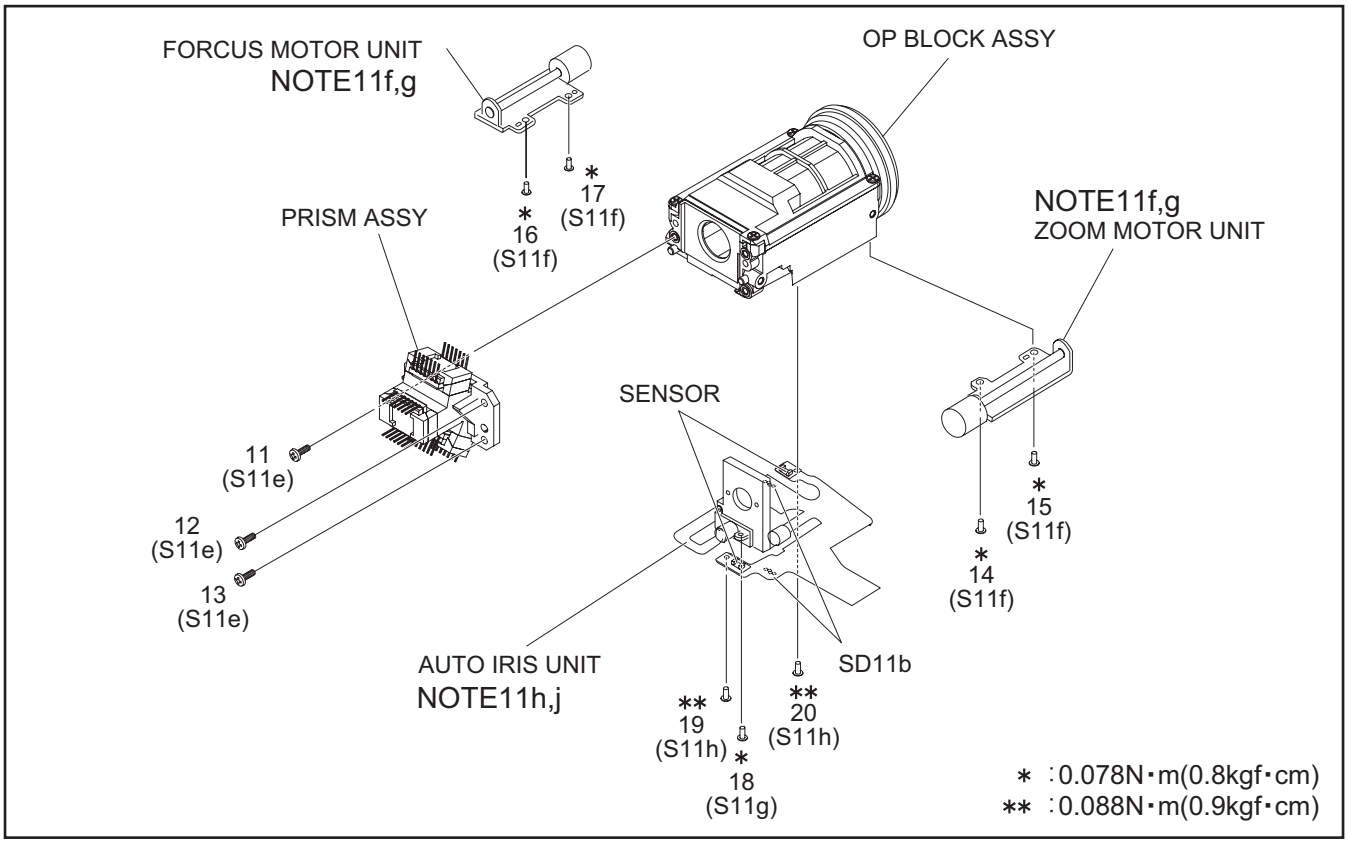


Fig.OP4

SECTION 4
ADJUSTMENT

4.1 PREPARATION

4.1.1 Precaution

Camera system and deck system of this model are specially adjusted by using PC.
However, if parts such as the following are replaced, an adjustment is required. The adjustment must be performed in a Service Center equipped with the concerned facilities.

- OP BLOCK ASSEMBLY
- MONITOR ASSEMBLY
- EEP ROM (IC4504 of DIGITAL board)

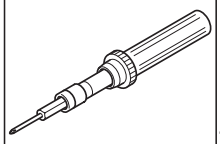
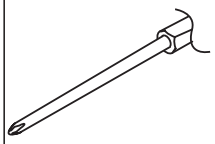
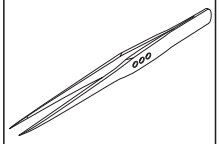
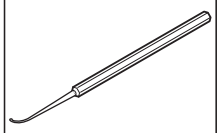
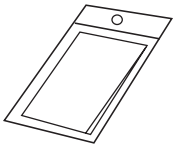
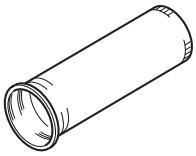
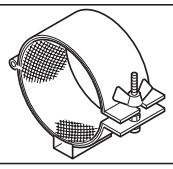
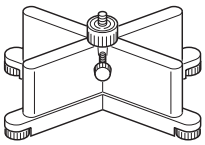
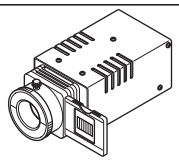
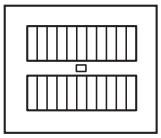
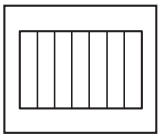
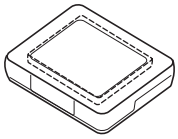
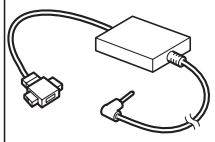
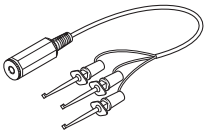
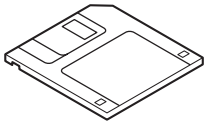
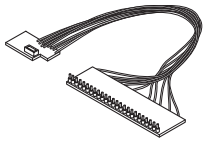
In the event of malfunction with electrical circuits, first find a defective portion with the aid of proper test instruments as shown in the following electrical adjustment procedure, and then commence necessary repair/ replacement/adjustment.

- In observing chip TP, use IC clips, etc. to avoid any stress. Prior to replacement of chip parts (especially IC), remove the solder completely to prevent peeling of the pattern.
- Use a patch cord if necessary. As for a patch cord, see the BOARD INTERCONNECTIONS.
- Since connectors are fragile, carefully handle them in disconnecting and connecting the FPC.

4.1.2 REQUIRED TEST EQUIPMENT

- Personal computer (for Windows)
- Color TV monitor
- Oscilloscope (dual-trace type, observable 100MHz or higher frequency). The one observable 300 MHz or higher frequency is recommended.
- Digital voltmeter
- DC power supply or AC adapter
- Frequency counter (with threshold level adjuster)

4.1.3 TOOLS REQUIRED FOR ADJUSTMENT

Torque Driver YTU94088	Bit YTU94088-003	Tweezers P-895
		
Chip IC Replacement Jig PTS40844-2	Cleaning Cloth KSMM-01	INF Adjustment Lens YTU92001B
		
INF Adjustment Lens Holder YTU94087	Camera Stand YTU93079	Light box Assembly YTU93096A
		
Gray Scale Chart YTU94133A	Color Bar Chart YTU94133C	HDD QAL0665-001
		
PC Cable QAM0099-005	Communication Cable YTU93107A	Service Support System YTU94057-88
		
Jig Connector Cable YTU93106A	Extension Connector YTU94145B-30	
		

- **Torque driver**
  Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.
- **Bit**
  This bit is slightly longer than those set in conventional torque drivers.
- **Tweezers**
  To be used for removing and installing parts and wires.
- **Chip IC replacement jig**
  To be used for adjustment of the camera system.
- **Cleaning cloth**
  Recommended the Cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

- **INF adjustment lens**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **INF adjustment lens holder**
  To be used together with the Camera stand for operating the Videocamera in the stripped-down condition such as the status without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring. For the usage of the INF lens holder, refer to the Service Bulletin No. YA-SB-10035.
- **Camera stand**
  To be used together with the INF adjustment lens holder. For the usage of the Camera stand, refer to the Service Bulletin No. YA-SB-10035.
- **Light box assembly**
  To be used for adjustment of the camera system. For the usage of the Light box assembly, refer to the Service Bulletin No. YA-SB-10035.
- **Gray scale chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **Color bar chart**
  To be used for adjustment of the camera system. For the usage of the INF adjustment lens, refer to the Service Bulletin No. YA-SB-10035.
- **HDD(1-inch hard disk)**
  To use for operation check.
- **PC cable**
  To be used to connect the Videocamera and a personal computer with each other when a personal computer issued for adjustment.
- **Communication cable**
  Connect the Communication cable between the PC cable and Jig connector cable when performing a PC adjustment.
- **Service support system**
  To be used for adjustment with a personal computer. Software can be downloaded also from JS-net.
- **Jig connector cable**
  Connected to JIG CONNECTOR of the main board and used for electrical adjustment, etc.
- **Extension connector**
  Connect this extension connector to the connector of the Jig connector cable for extending the cable connector.

4.2 JIG CONNECTOR CABLE CONNECTION

■ Connection procedure

NOTE

Be sure to turn the power "OFF", when connecting the JIG CONNECTOR CABLE.
If the JIG CONNECTOR CABLE is connected with the power "ON", communication error may occur.

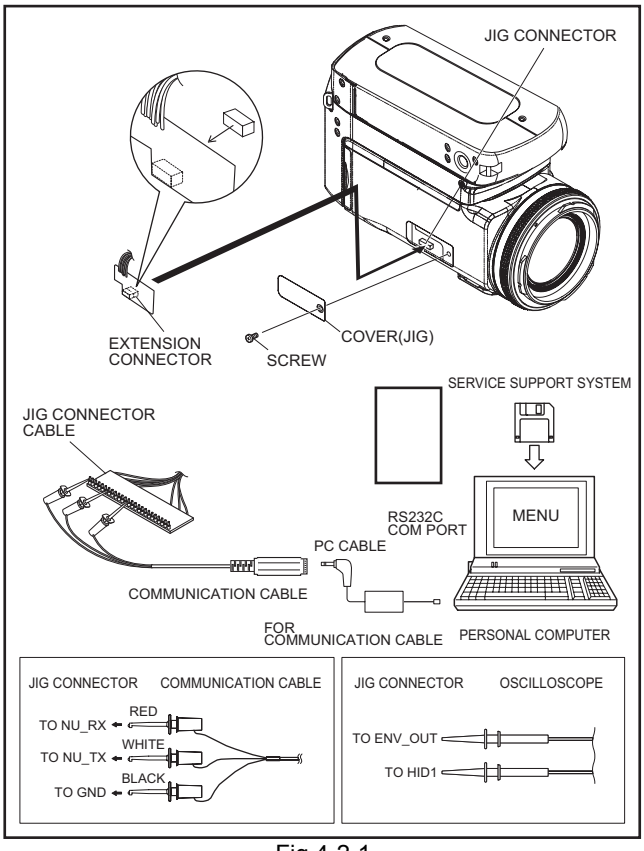


Fig.4-2-1

■ Jig connector diagrams

JIG CONNECTOR CABLE (YTU93106A)

DIGITAL CN105			JIG CONN. BOARD (PIN NO.)	
ARMTDO	1		1	ARMTDO
ARMTCK		16	2	ARMTMS
ARMTMS	2		3	nARMTRST
ARMTDI		17	4	REG_3.1V
nARMTRST	3		5	NU_TX
nJRESET		18	6	SJIG_TX
REG_3.1V	4		7	MOD0
NU_RX		19	8	VPP
NU_TX	5		9	MON_B
AL_3.3V		20	10	MON_R
SJIG_TX	6		11	MON_G
SJIG_RX		21	12	NC
MOD0	7		13	NC
SJIG_RST		22	14	NC
VPP	8		15	NC
GND		23	16	ARMTCK
MON_B	9		17	ARMTDI
VCOM		24	18	nJRESET
MON_R	10		19	NU_RX
GND		25	20	AL_3.3V
MON_G	11		21	SJIG_RX
MON_RPD		26	22	SJIG_RST
NC	12		23	GND
T_BATT		27	24	VCOM
NC	13		25	GND
NC		28	26	MON_RPD
NC	14		27	T_BATT
NC		29	28	NC
NC	15		29	NC
NC		30	30	NC

Fig.4-2-2

CABINET PARTS AND ELECTRICAL PARTS

Symbol No.	[1]				[2]					[1]		[3]		[4]			[5]				[6]		[7]			[8]			[9]			[10]
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	-
Place to stick screw			*	*		**		**				**	**				*		*	*	*	*	**	**		*	*	*	**	**	**	-
Reference drawing (Fig.No.)	FA1				FA2					FA3-1		FA3-2		FA3-3			FA4				FA5-1		FA6			FA7-1			FA8			
Screw tightening torque	b				a		c	a	d	c		a					d				a										-

[9]MONITOR ASSY

Symbol No.	[1]			[2]				[3]		[4]					
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Place to stick screw				*	*	*	*			**	**	**			
Reference drawing (Fig.No.)	MO1							MO2		MO3-1		MO3-2			
Screw tightening torque	a							e		a		e			

[10]CAMERA ASSY

Symbol No.	[1]				[2]					[3]	[4]	[5]				[6]					[7]		[8]		[9]	[10]		[11]
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	-
Place to stick screw	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**			-
Reference drawing (Fig.No.)	C1				C2					C3		C4-2				C4-3									C5	C6		
Screw tightening torque	a																											-

[11]OP BLOCK ASSY &CCD BOARD ASSY

Symbol No.	[11]																			
Removing order of screw	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Place to stick screw	**		**	**	**															
Reference drawing (Fig.No.)	OP1		OP2			OP3						OP4								
Screw tightening torque	a					f		a						e					g	

NOTE:

1）* and ** (This mark shows where to attach the screws) : Do not reuse the screws because the screw lock bond was applied to prevent the screws from loosening. Prepare the specified screws and use them in place of the removed screws.

2）Tightening torque for the screws

- There are setting limits of the torque value for the torque driver. If the value exceeds the setting value, take it as a rough measurement (reference value), and tighten the screw manually.
- The specified torque value is a recommended value of the initial assembly. Therefore, set the value below the specified torque value in the assembling procedure. Be careful not to break either the screws or the screw holes.

a : 0.098N･m (1.0kgf･cm)　b : 0.059N･m (0.6kgf･cm)　c : 0.039N･m (0.4kgf･cm)　d : 0.069N･m (0.7kgf･cm)
e : 0.078N･m (0.8kgf･cm)　f : 0.118N･m (1.2kgf･cm)　g : 0.088N･m (0.9kgf･cm)

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(No.YF101)

Printed in Japan
VPT

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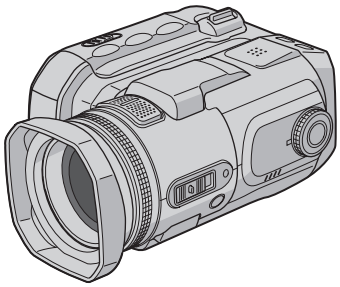
SCHEMATIC DIAGRAMS

DIGITAL MEDIA CAMERA

GZ-MC500AA, GZ-MC500AC, GZ-MC500AG, GZ-MC500AH, GZ-MC500EK, GZ-MC500EX, GZ-MC500EY, GZ-MC500EZ

CD-ROM No.SML200508



GZ-MC500AA, GZ-MC500AC, GZ-MC500AG, GZ-MC500AH,
GZ-MC500EK, GZ-MC500EX, GZ-MC500EY, GZ-MC500EZ [M5S727]

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No.YF101SCH
2005/8

CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components indentified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ(1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

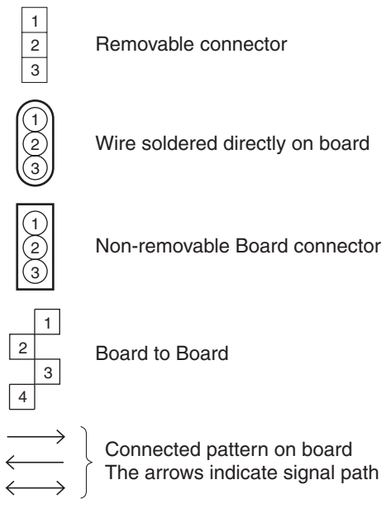
Note: The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

2. Indications of control voltage

AUX : Active at high.

$\overline{AUX}$ or AUX(L) : Active at low.

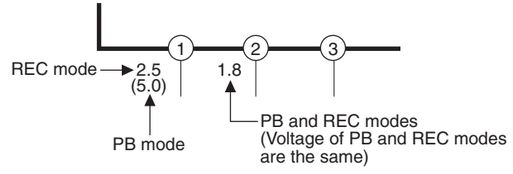
3. Interpreting Connector indications



Note: For the destination of each signal and further line connections that are cut off from the diagram, refer to "BOARD INTERCONNECTIONS"

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
2) Indication on schematic diagram
   Voltage indications for REC and PB mode on the schematic diagram are as shown below.

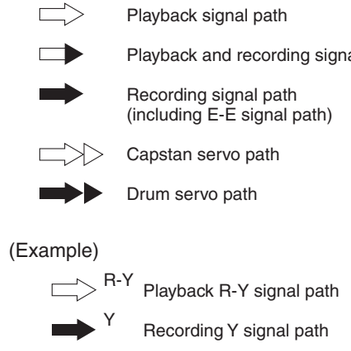


Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Signal path Symbols

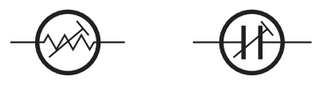
The arrows indicate the signal path as follows.

NOTE : The arrow is DVC unique object.



6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.

CIRCUIT BOARD NOTES

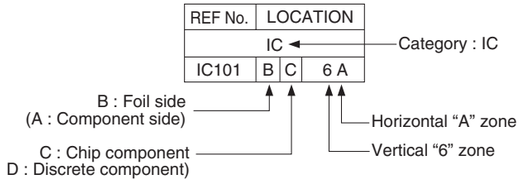
1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

rts location are indicated by guide scale on the circuit board.

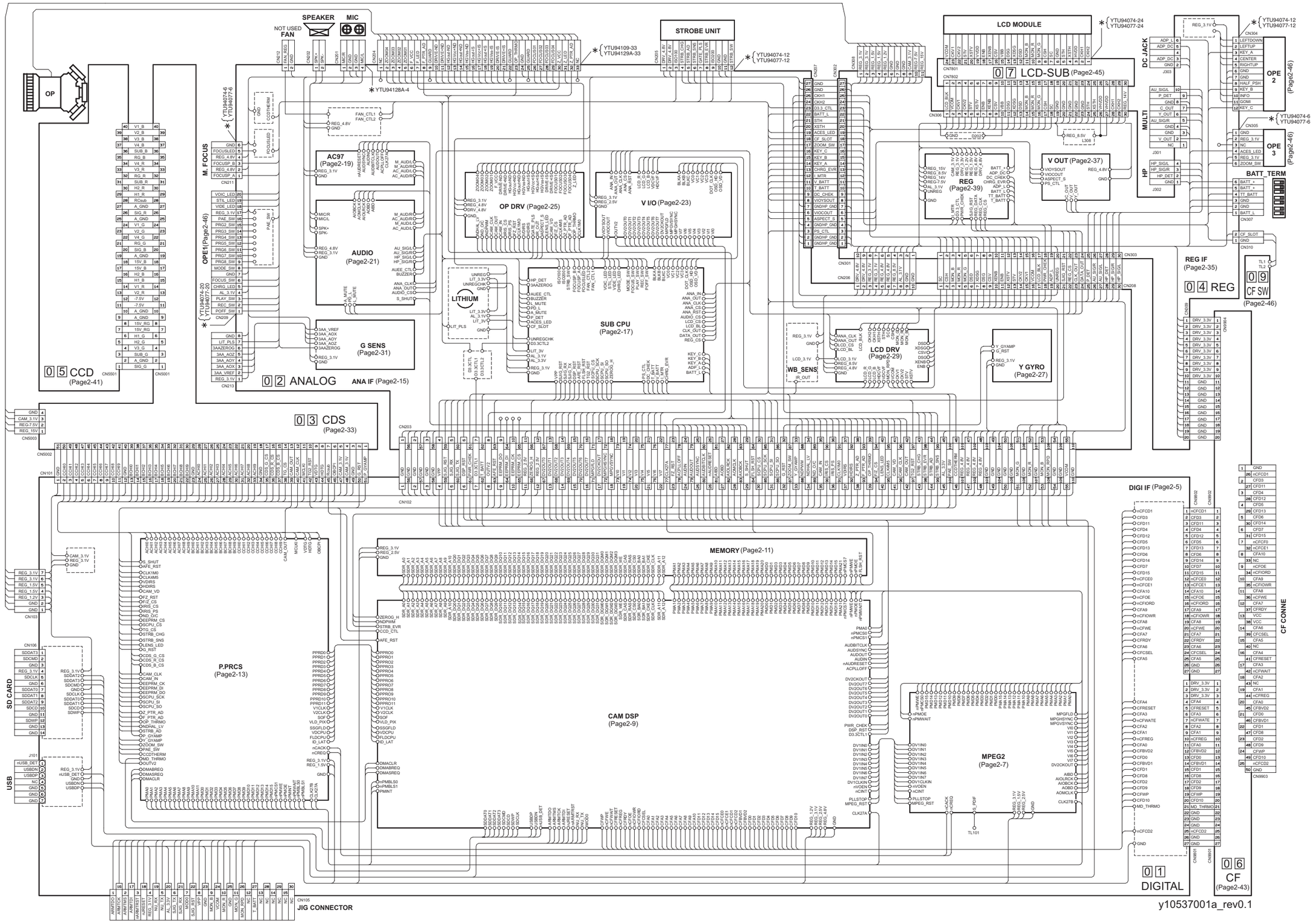
2. Parts location guides

Parts location are indicated by guide scale on the circuit board.



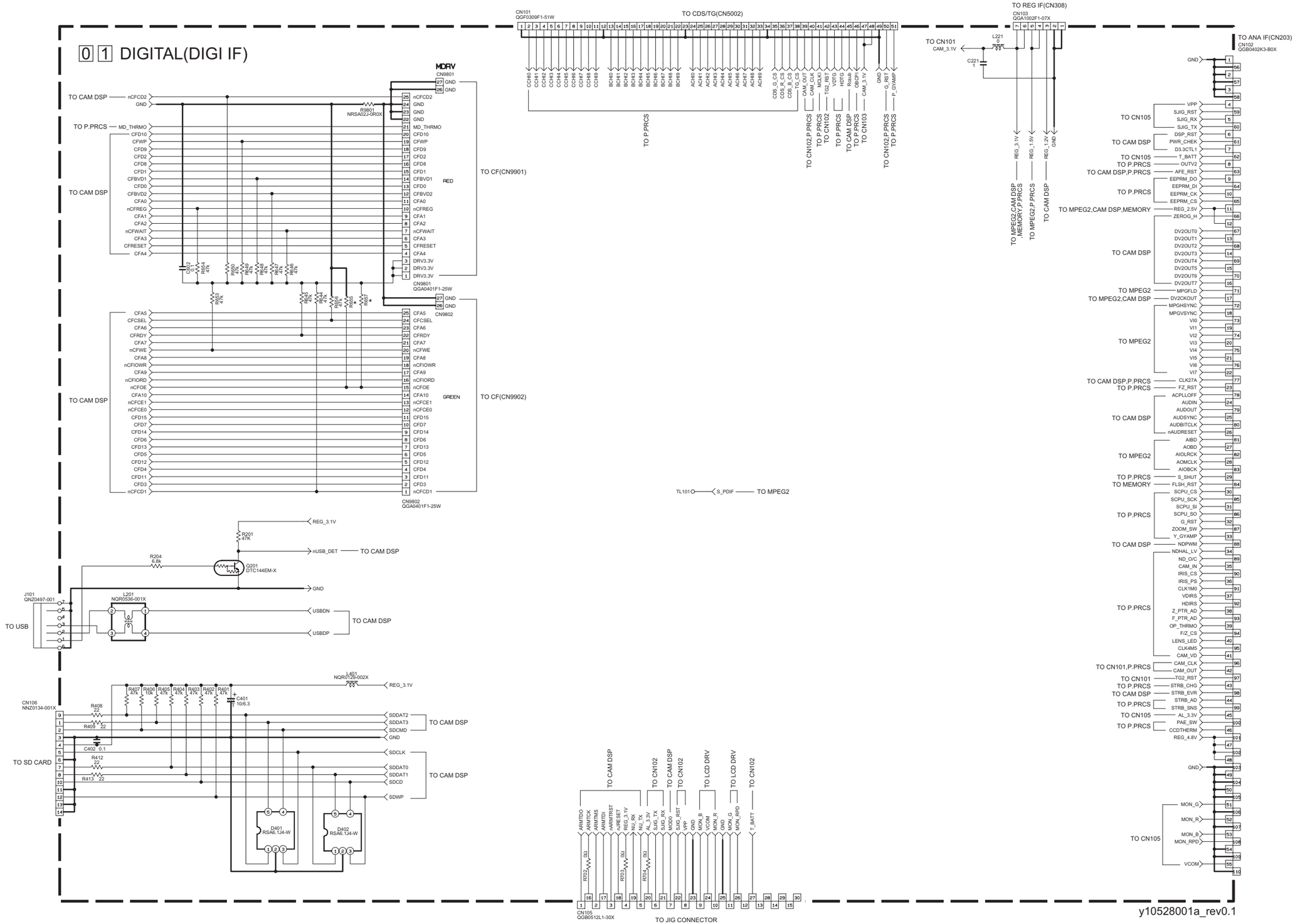
Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

■ BOARD INTERCONNECTION



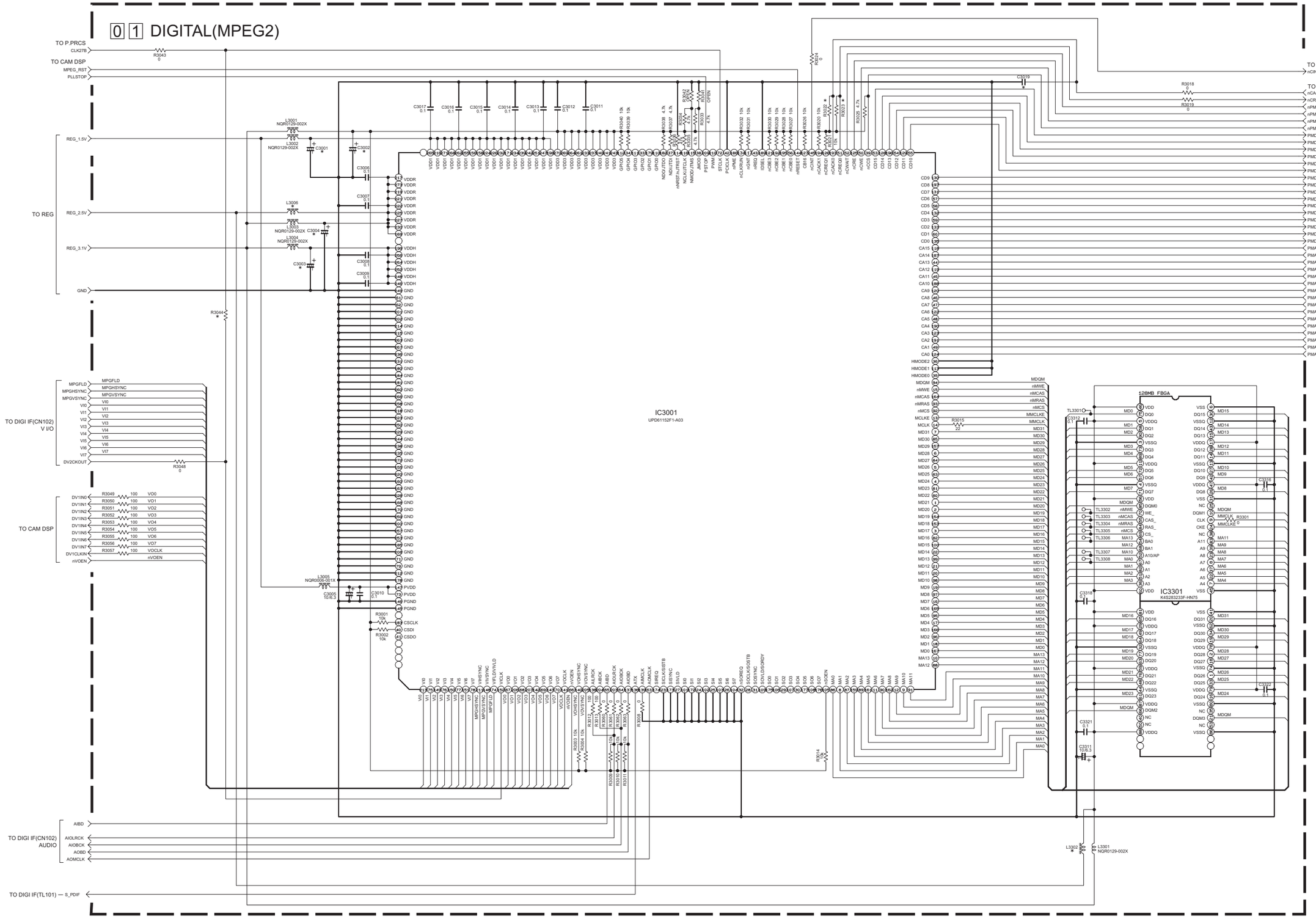
NOTE: The number of patch cords (∗) are indicated by interconnected.

■ DIGITAL(DIGI IF) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ DIGITAL(MPEG2) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

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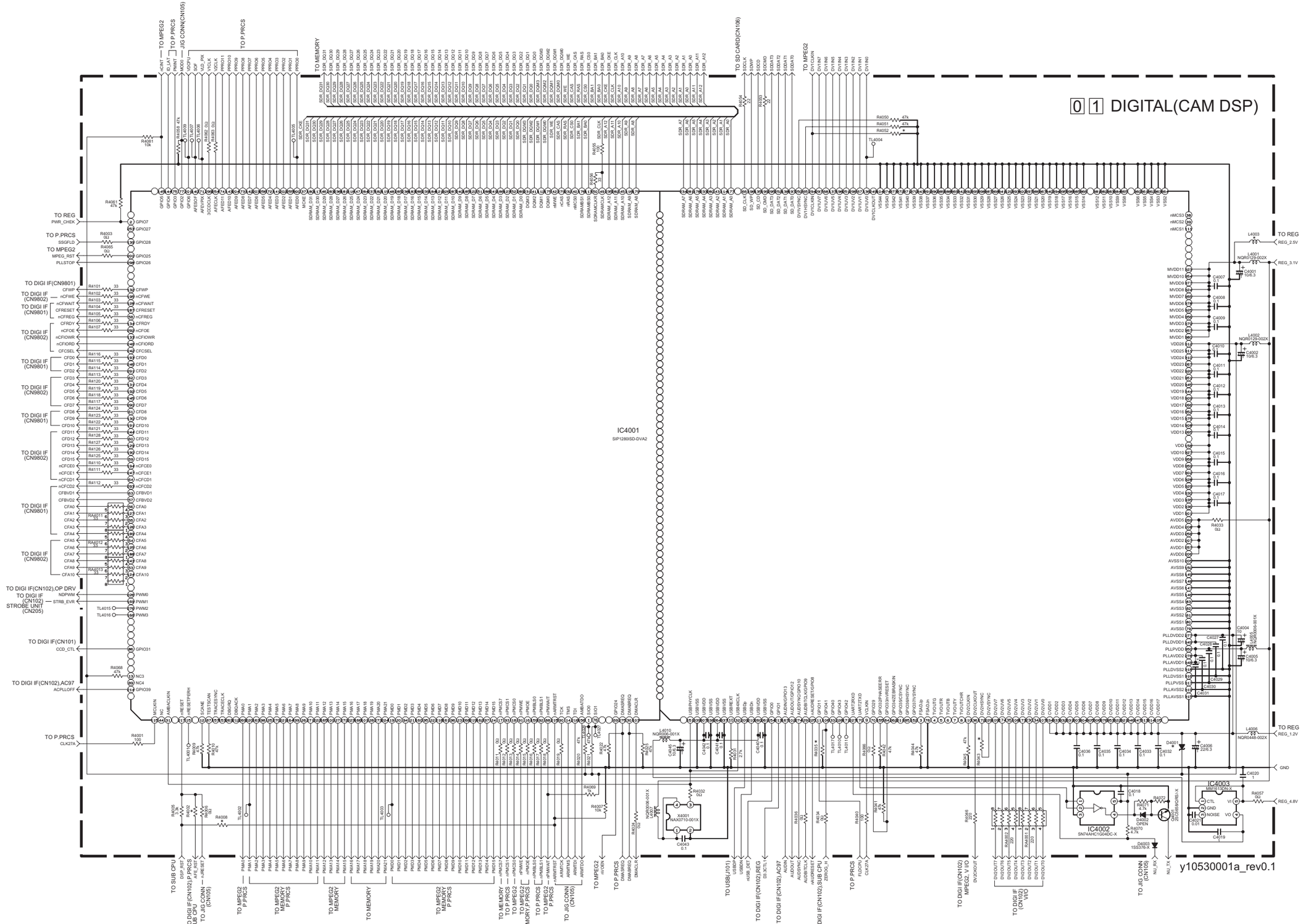
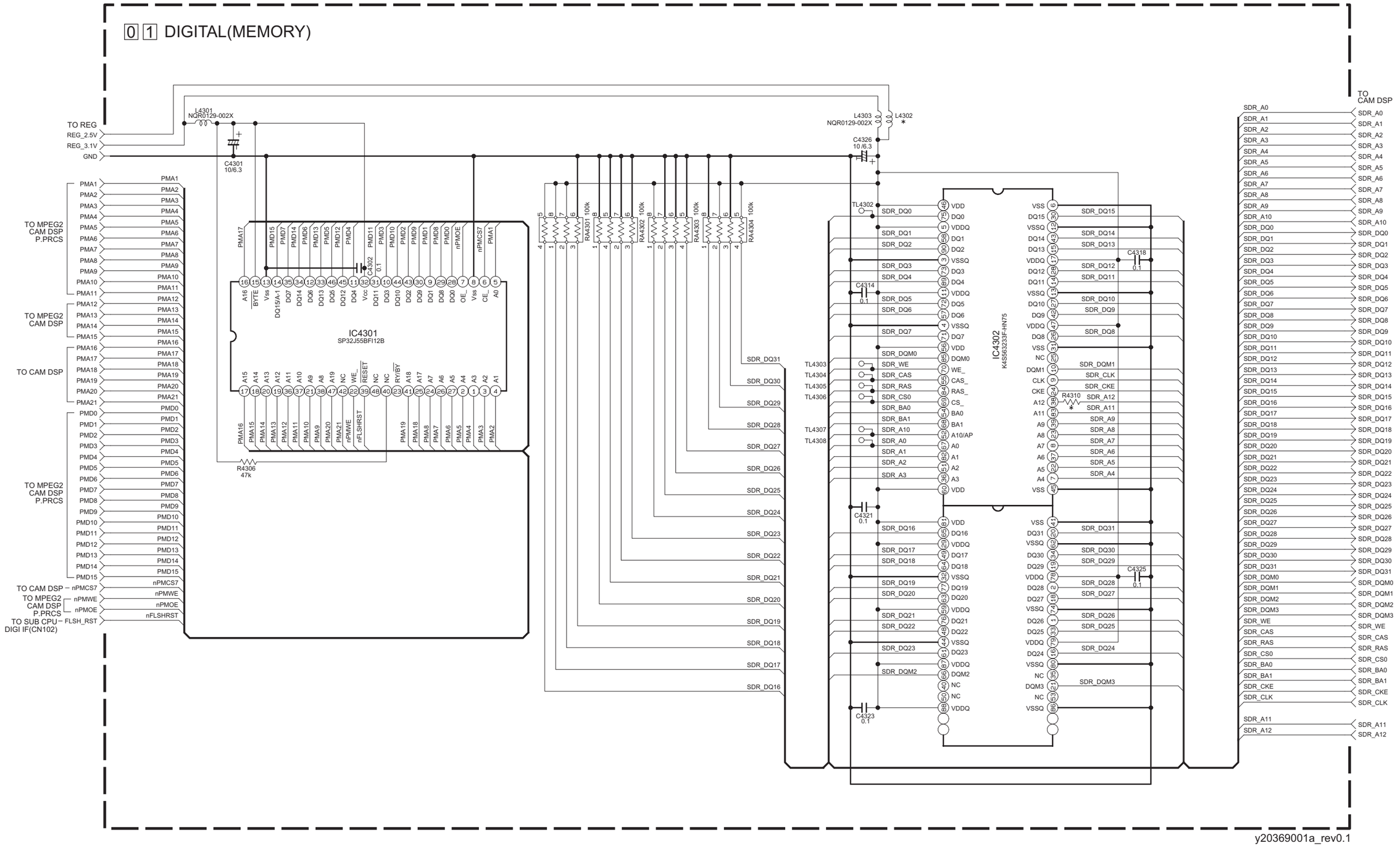
■ DIGITAL(CAM DSP) SCHEMATIC DIAGRAM



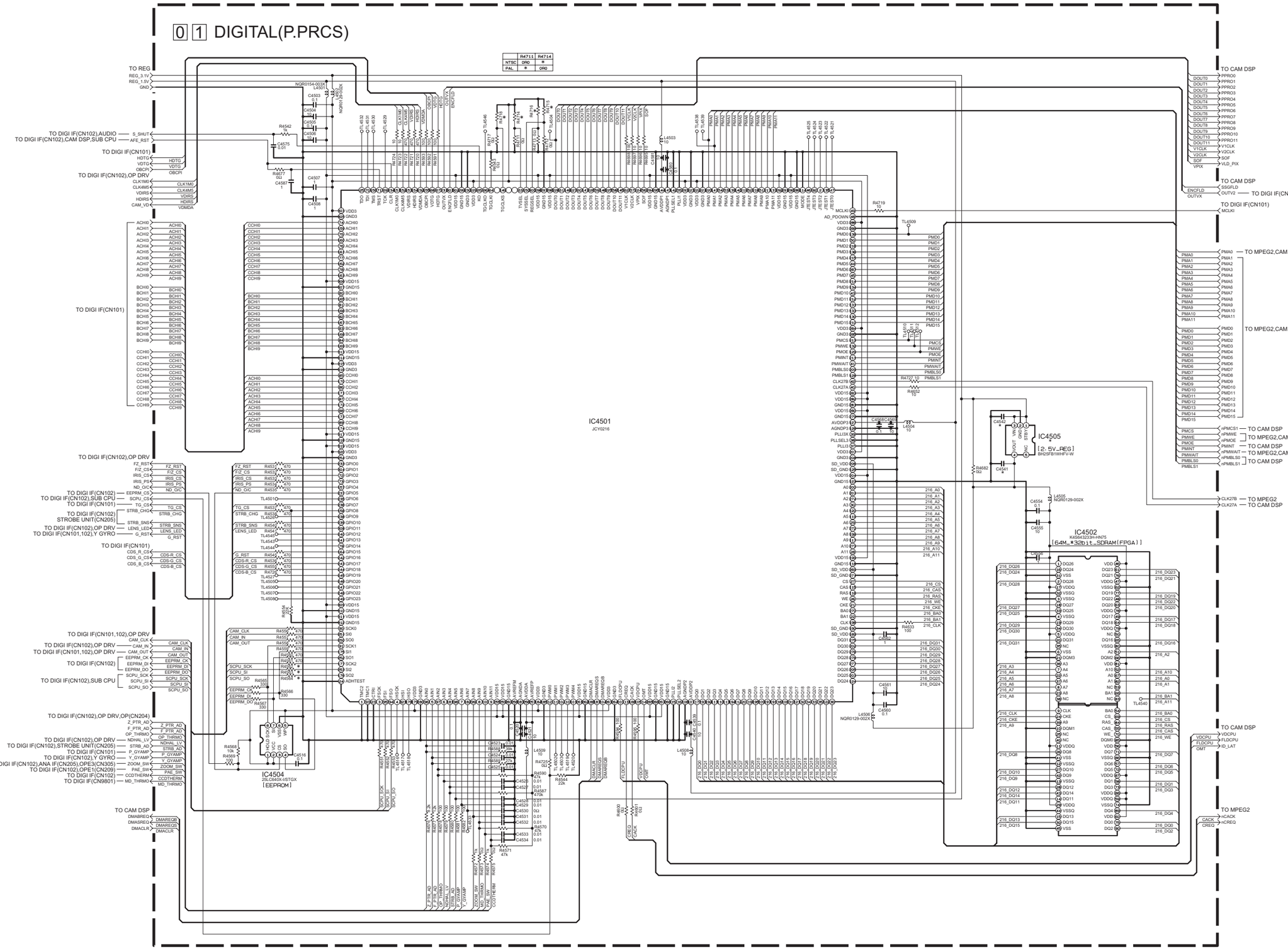
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ DIGITAL(MEMORY) SCHEMATIC DIAGRAM

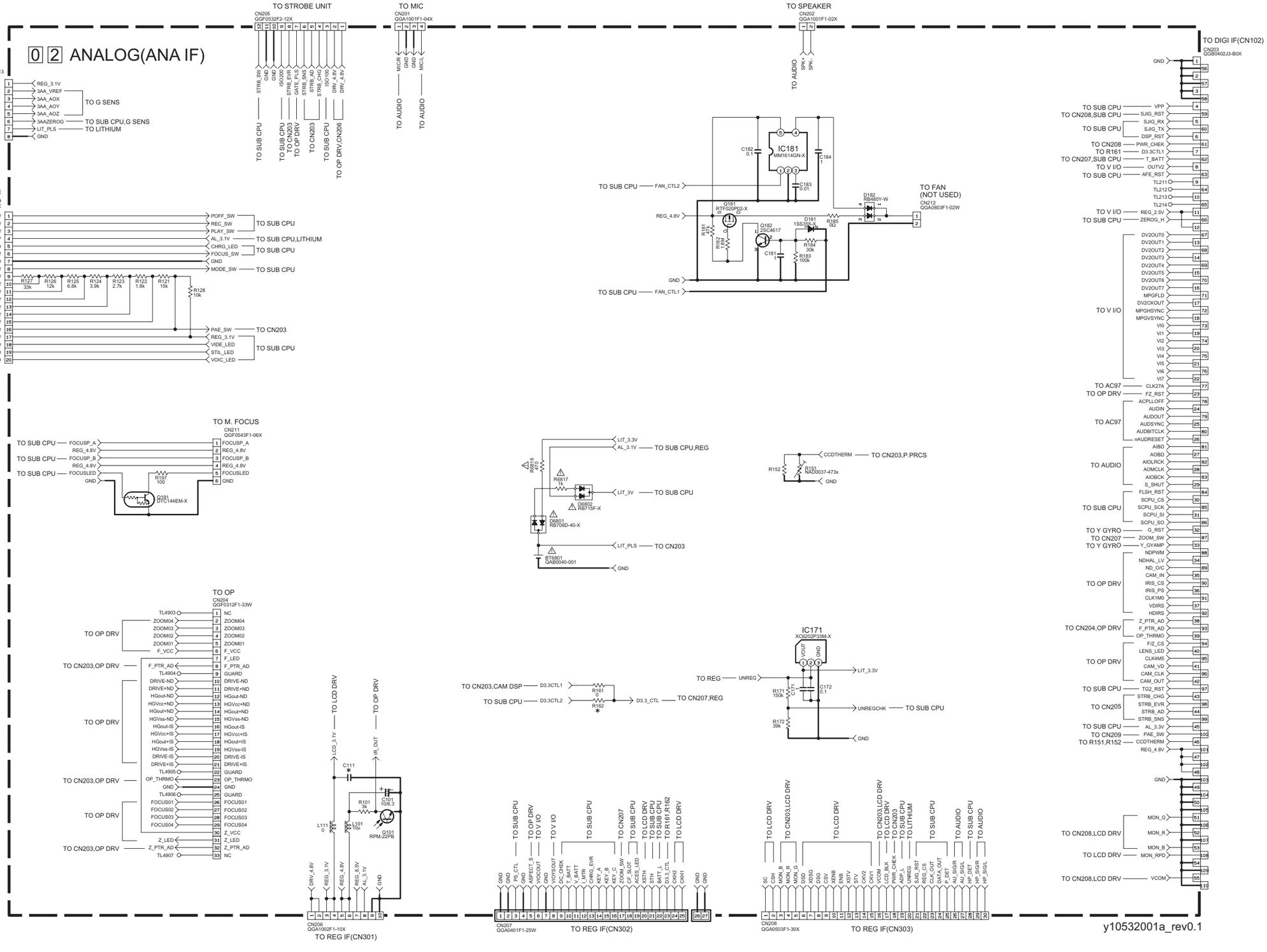


NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ DIGITAL(P.PRCS) SCHEMATIC DIAGRAM

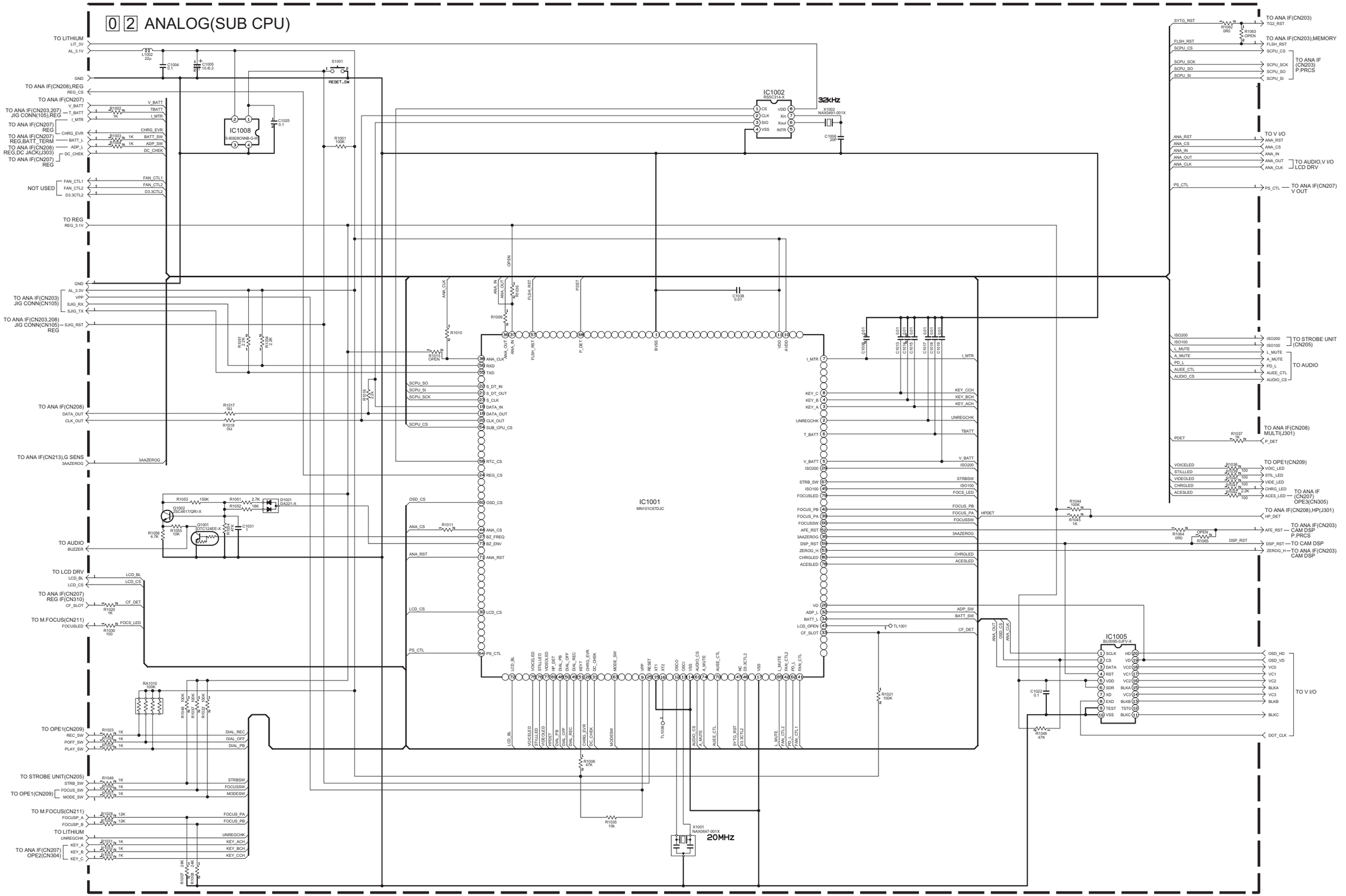


■ ANALOG(ANA IF) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(SUB CPU) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

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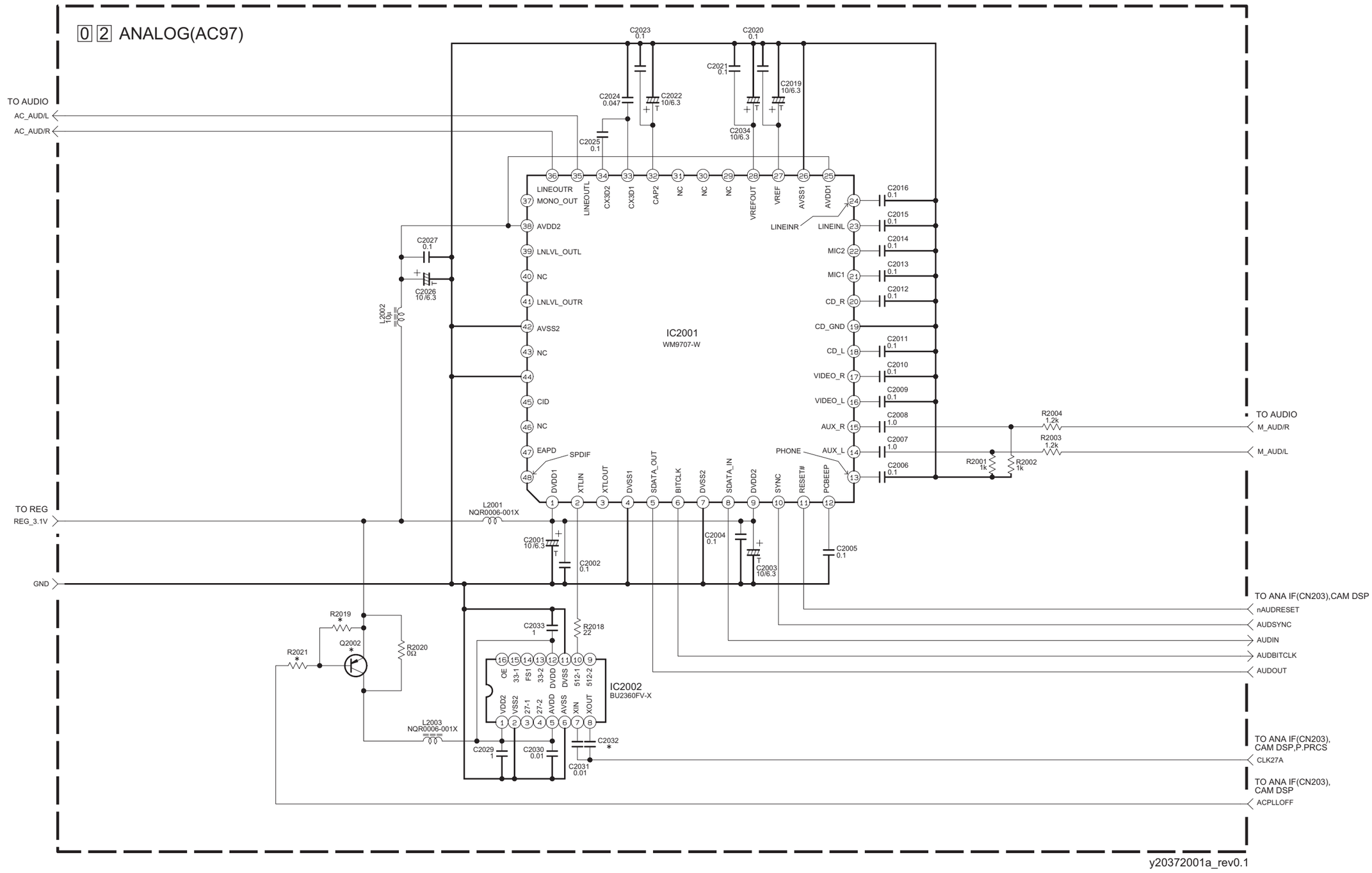
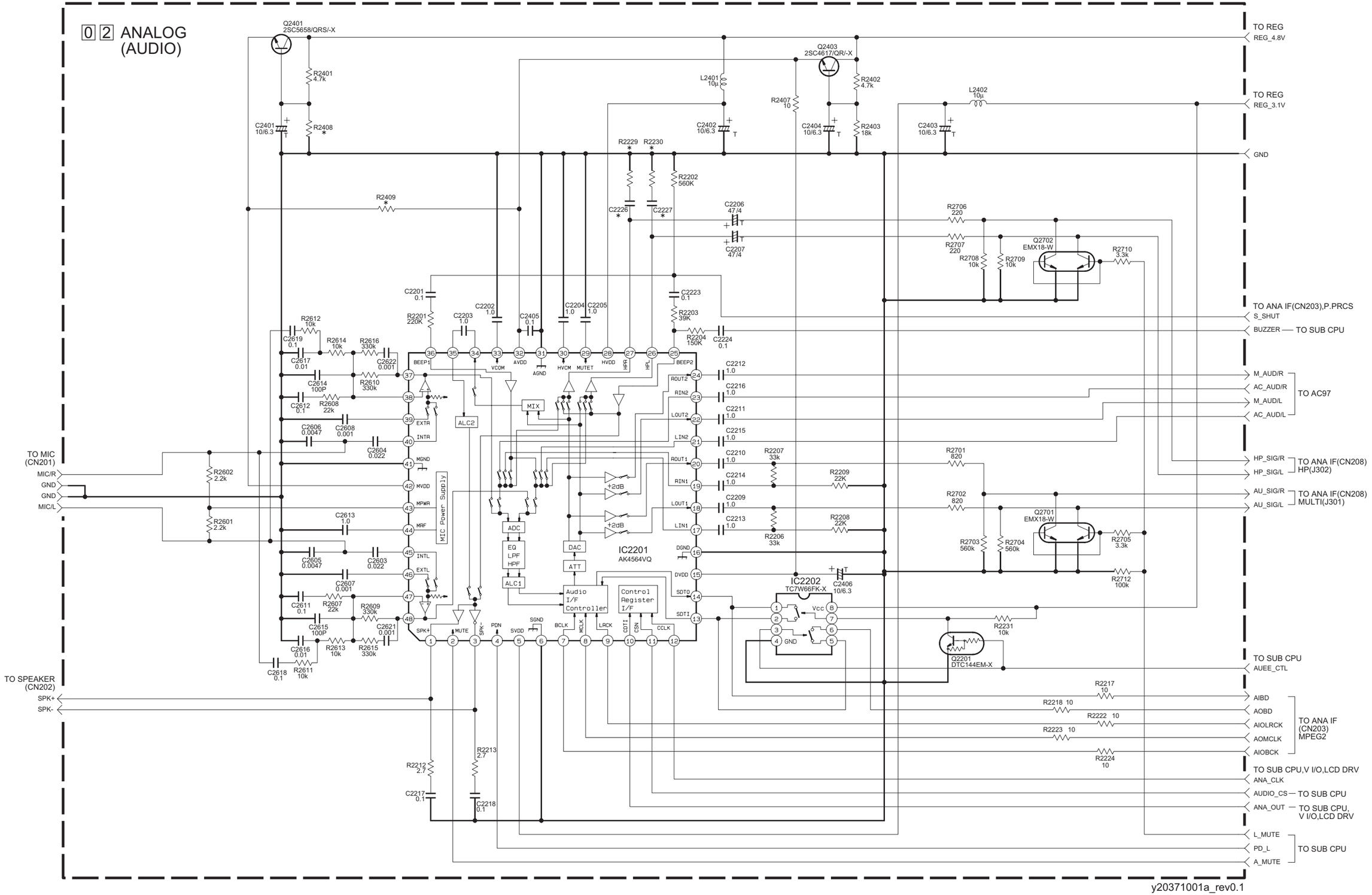
■ ANALOG(AC97) SCHEMATIC DIAGRAM



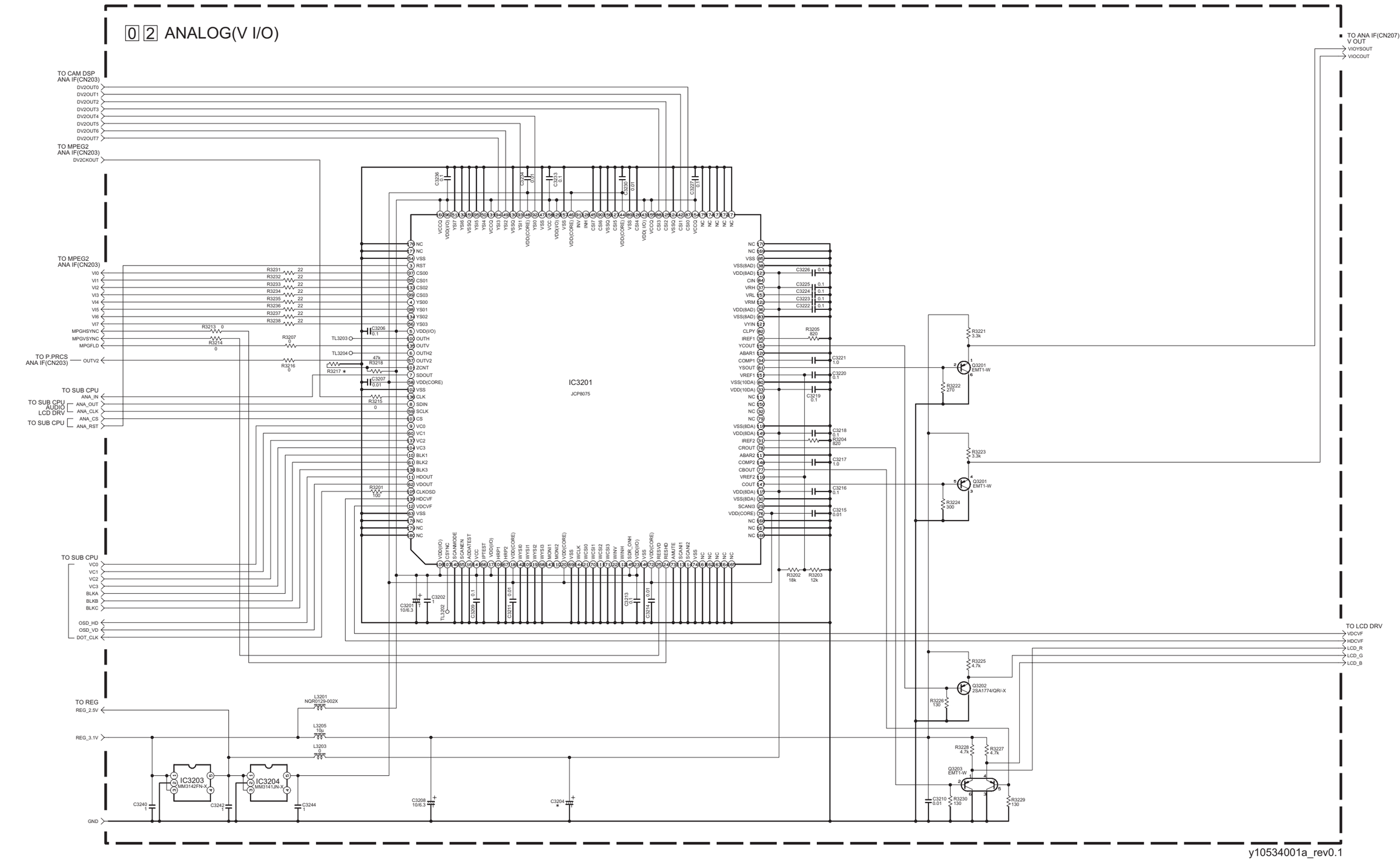
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(AUDIO) SCHEMATIC DIAGRAM



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(V I/O) SCHEMATIC DIAGRAM



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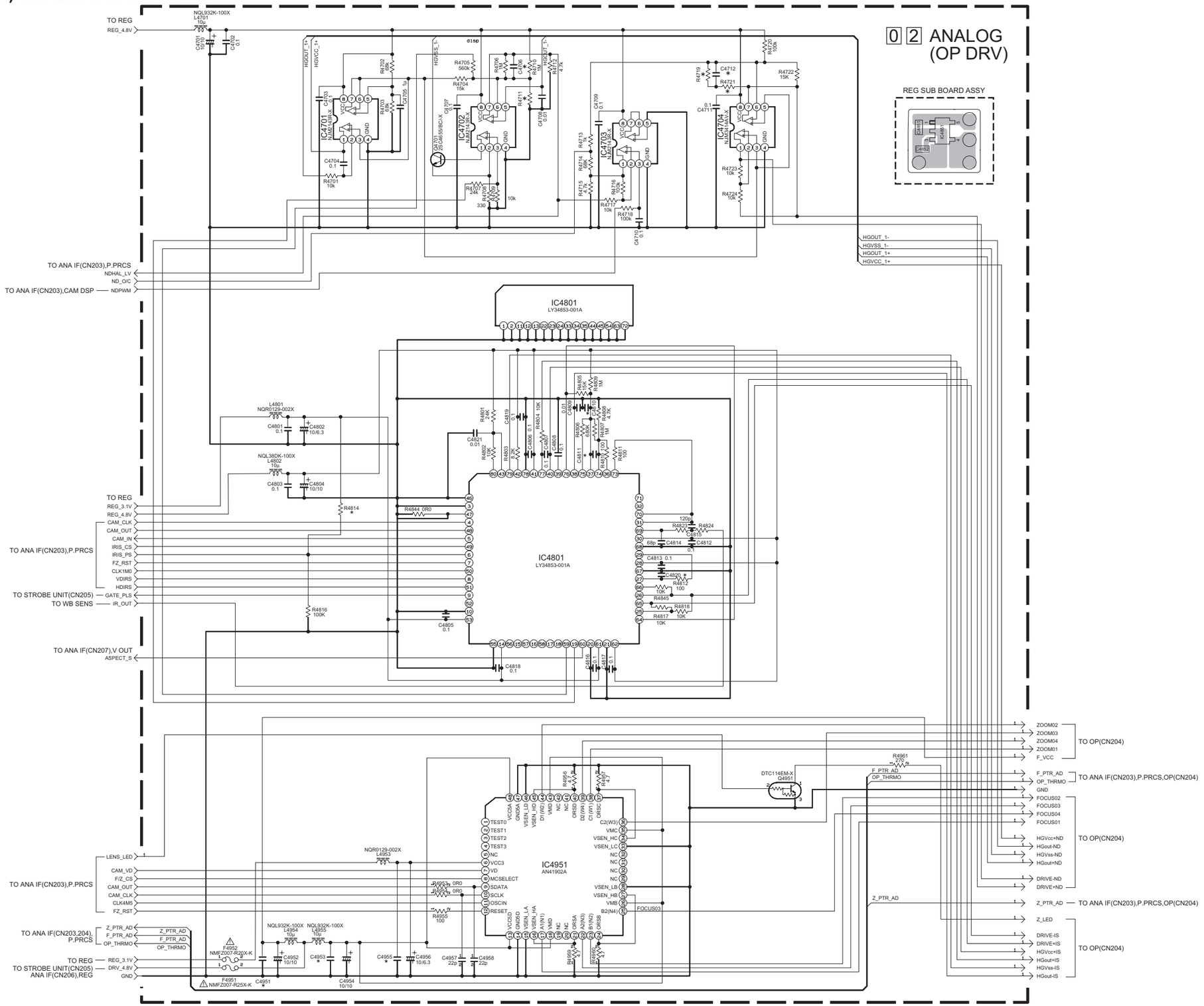
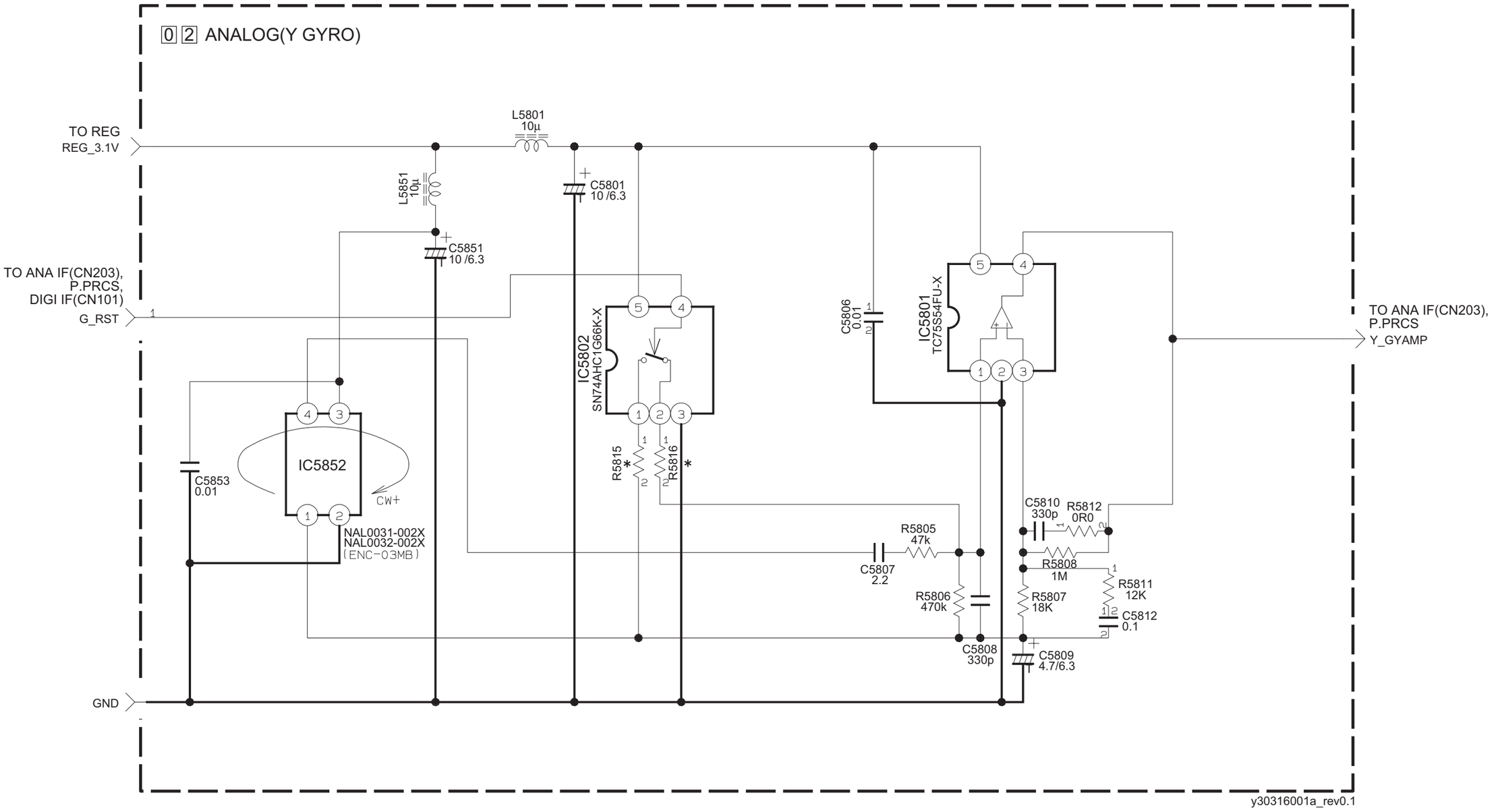
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(OP DRV) SCHEMATIC DIAGRAM



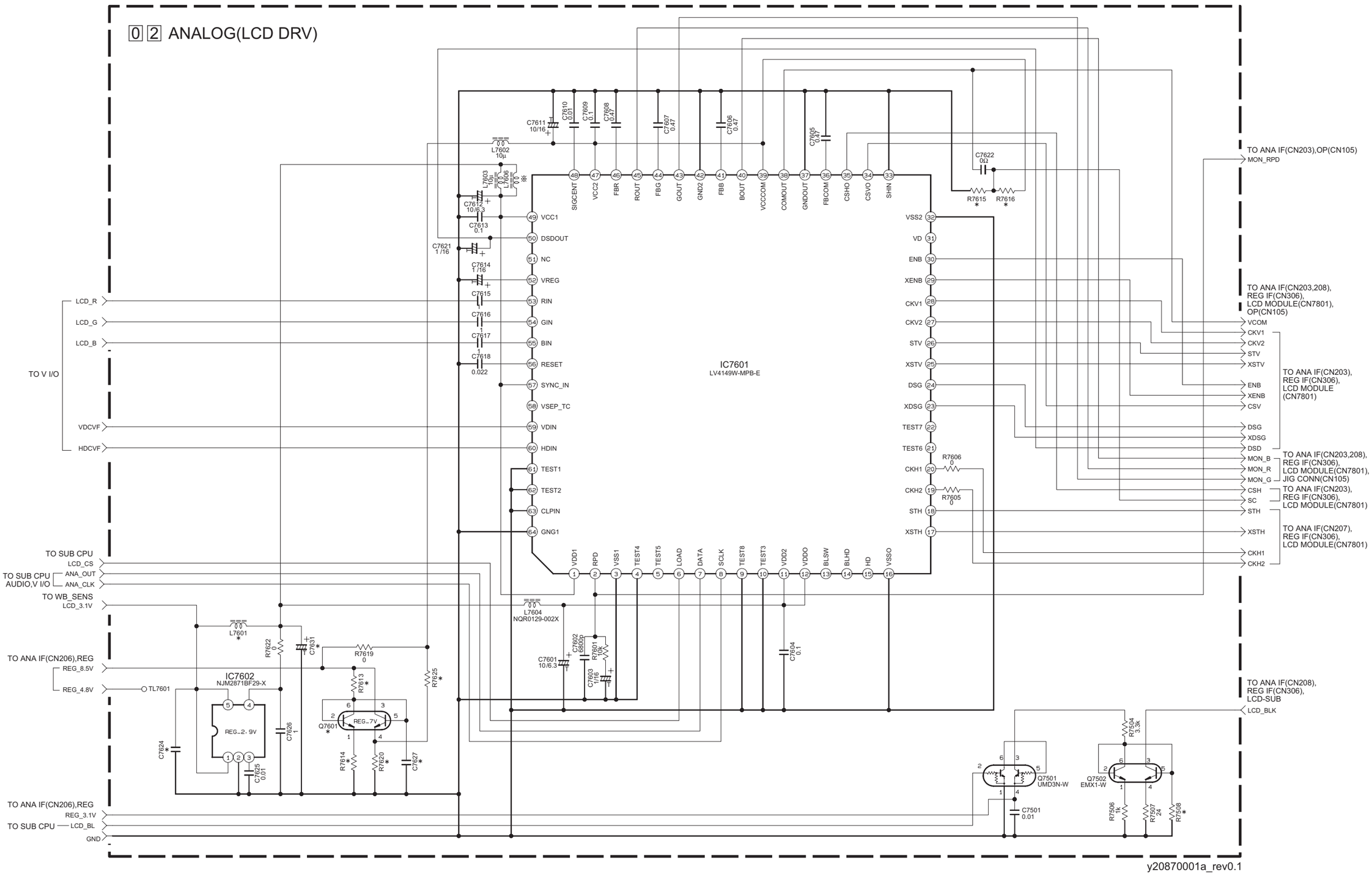
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(Y GYRO) SCHEMATIC DIAGRAM



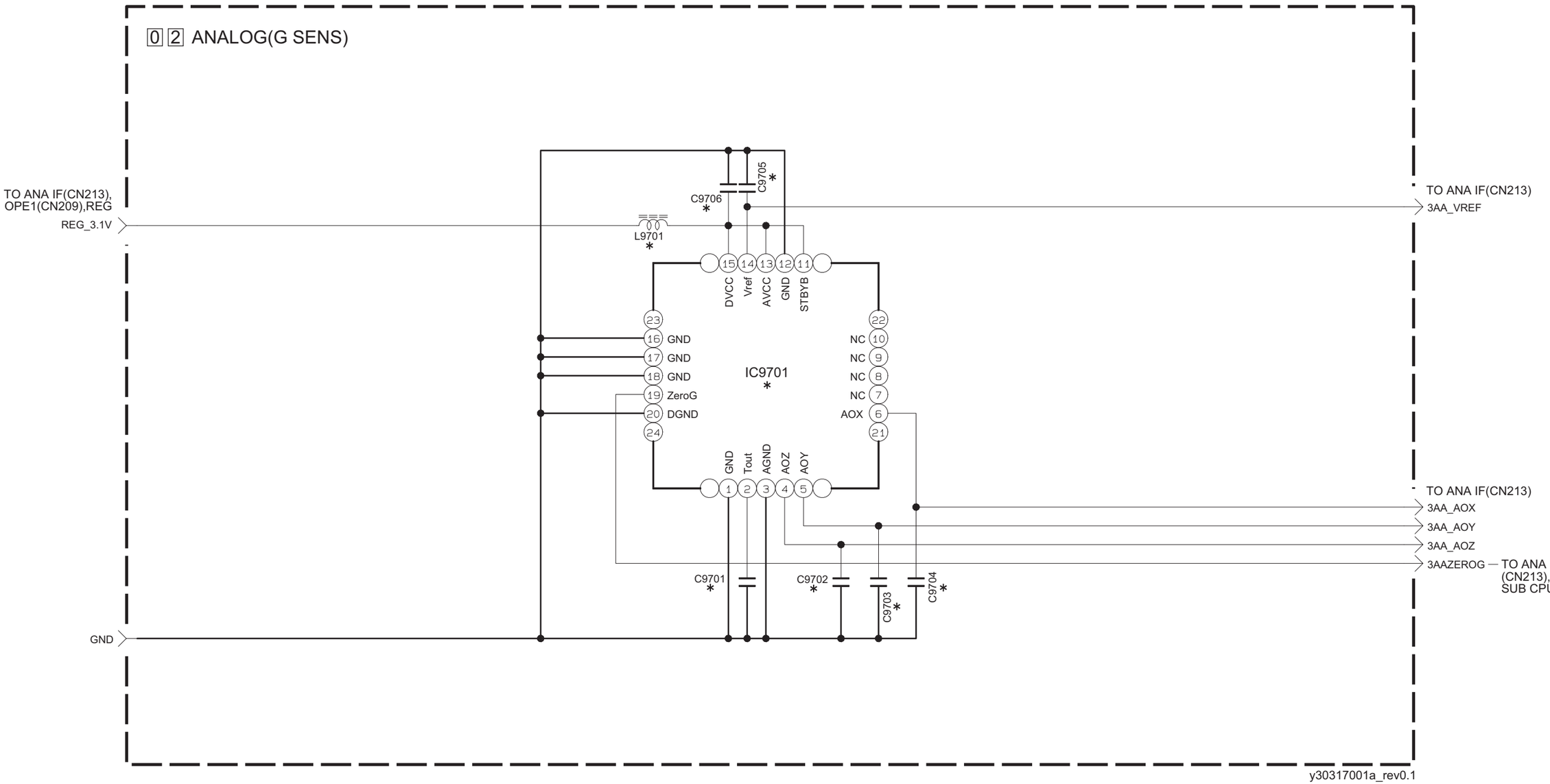
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(LCD DRV) SCHEMATIC DIAGRAM



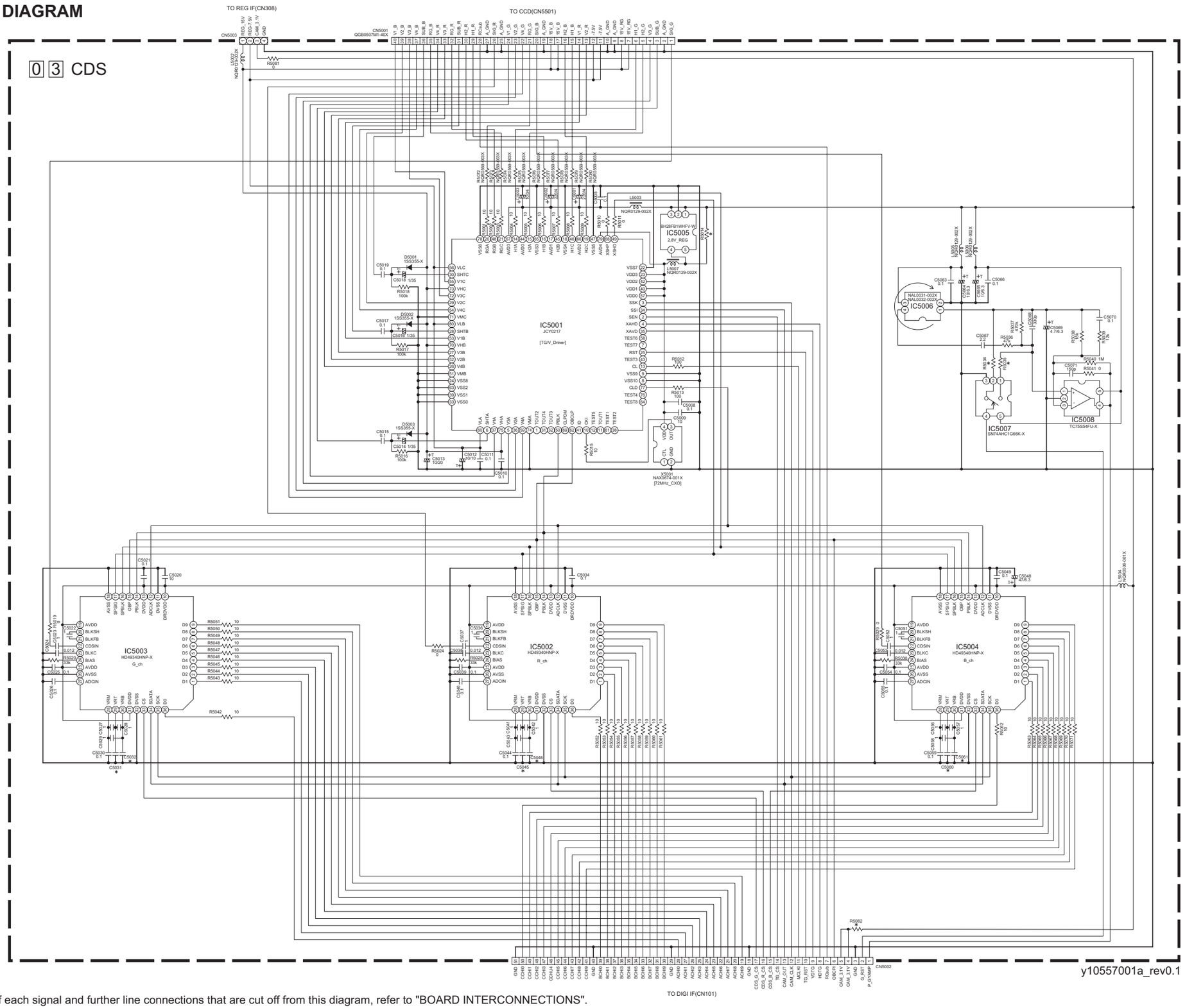
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ ANALOG(G SENS) SCHEMATIC DIAGRAM



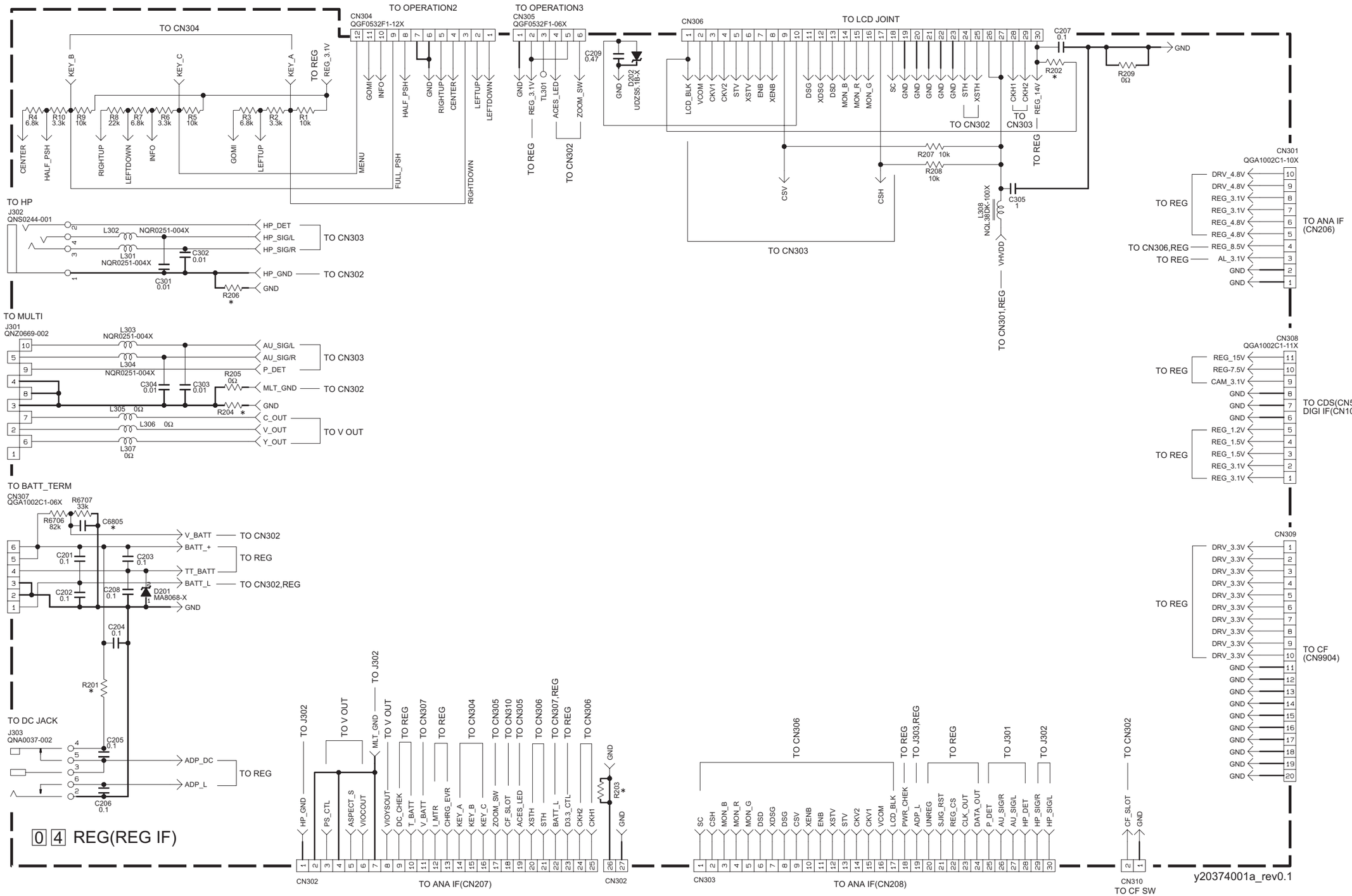
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ CDS SCHEMATIC DIAGRAM



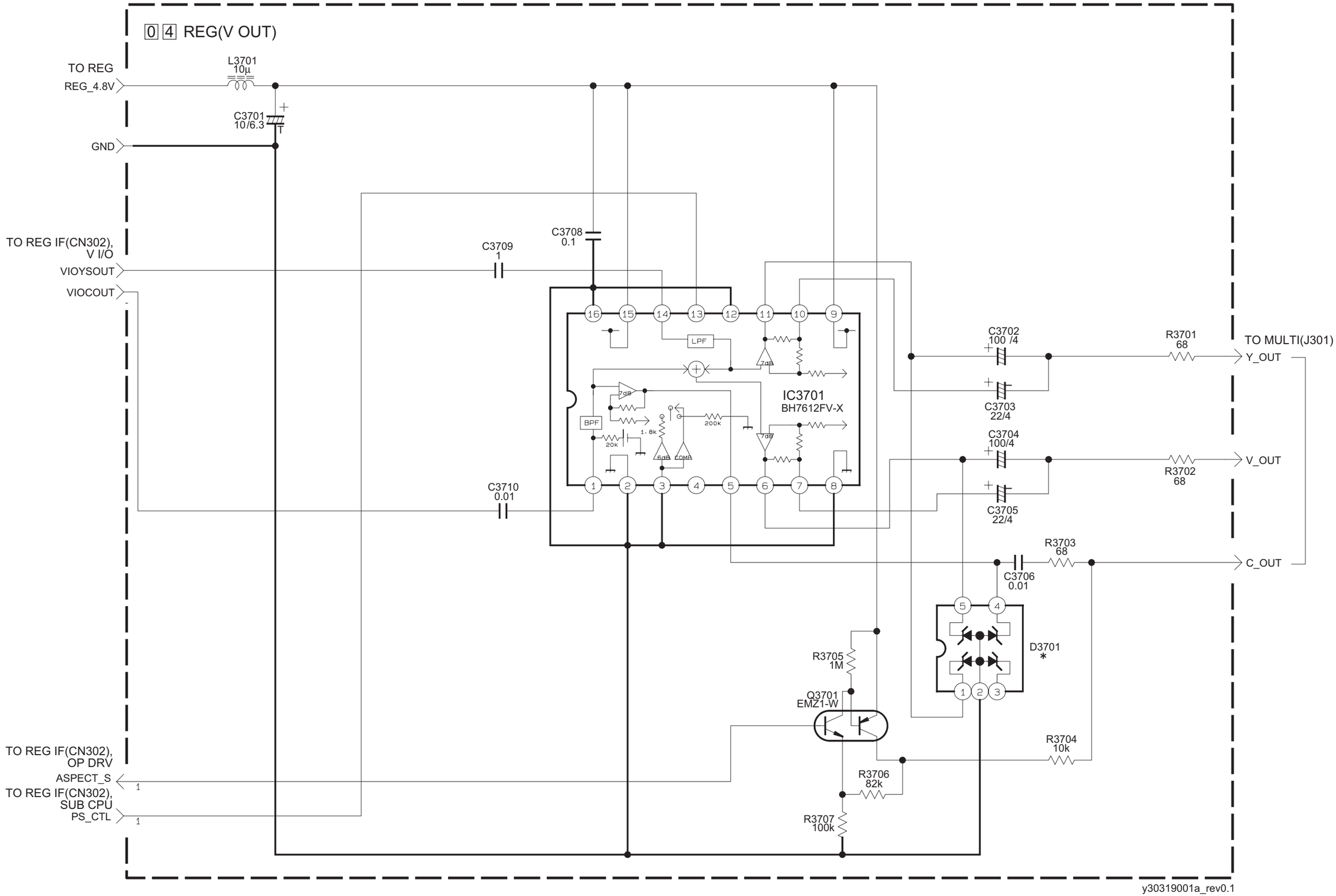
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ REG(REG IF) SCHEMATIC DIAGRAM



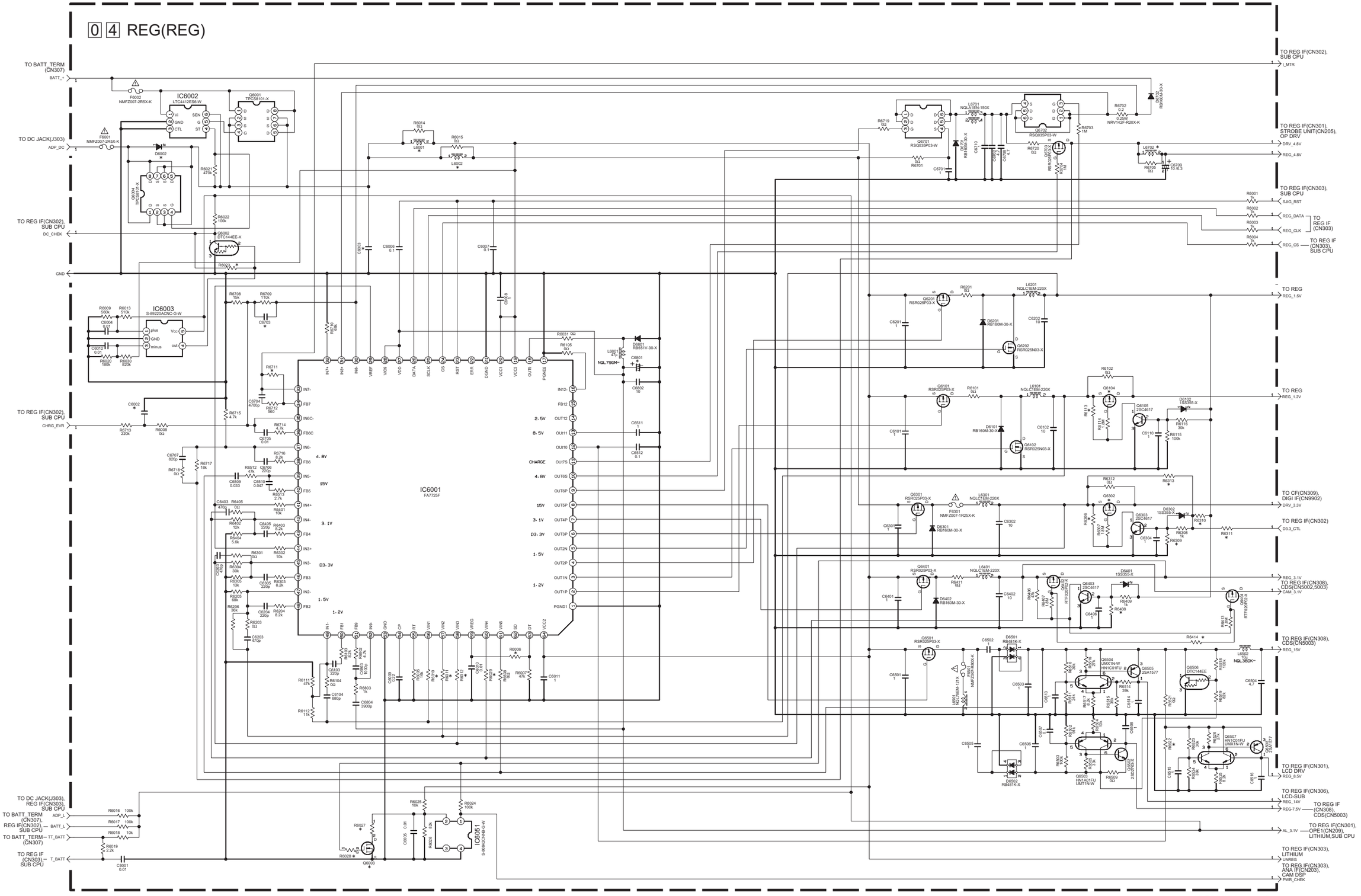
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ REG(V OUT) SCHEMATIC DIAGRAM

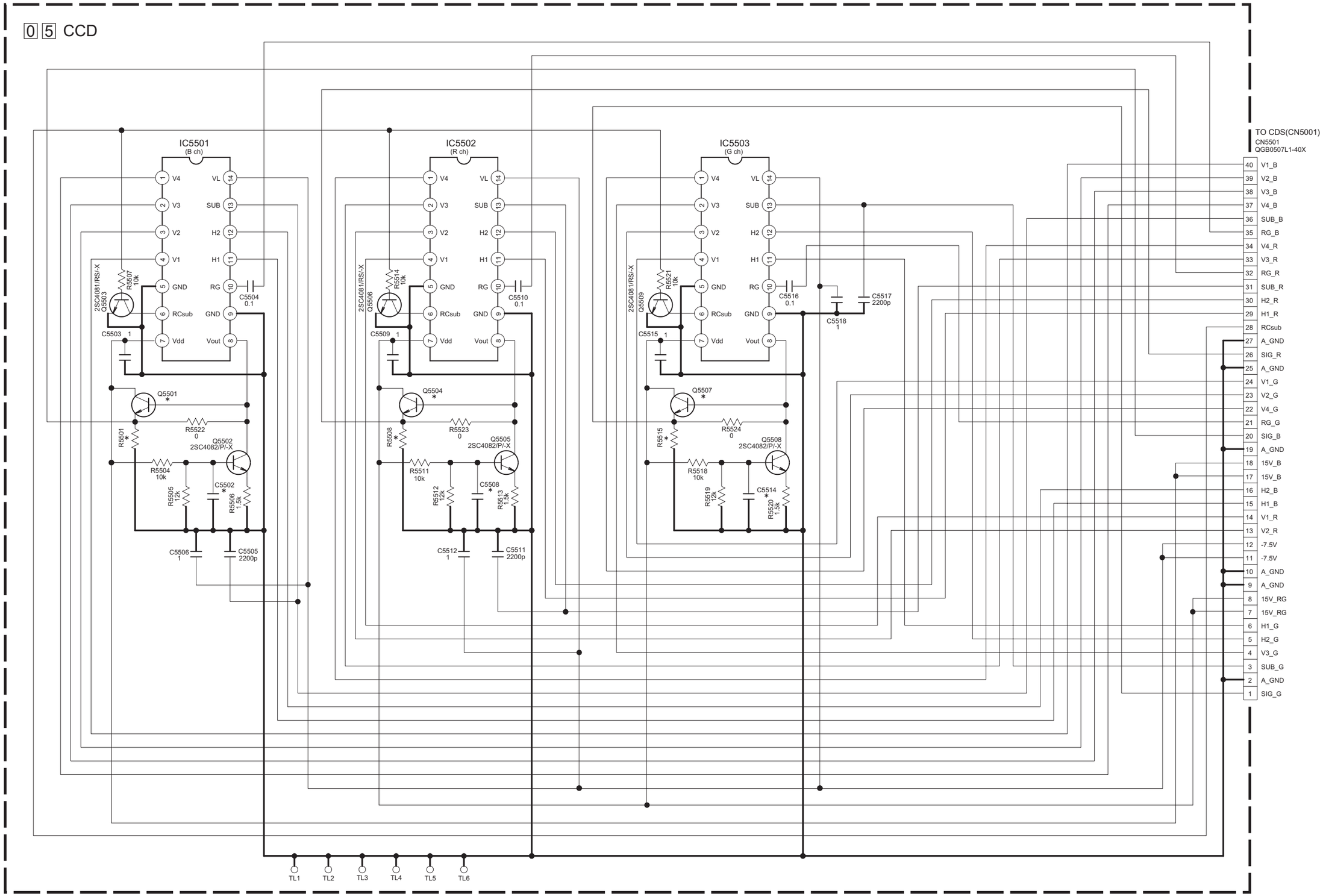


NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ REG(REG) SCHEMATIC DIAGRAM


04 REG(REG)
IC6002
LTC4412ES6-W
IC6003
S-89220ACNC-G-W
IC6001
FA7725F
IC6051
S-80843CNNB-G-W
TO BATT_TERM (CN307)
TO DC JACK(J303)
TO REG IF(CN302), SUB CPU
TO REG IF(CN303), SUB CPU
TO REG IF(CN301), STROBE UNIT(CN205), OP DRV
TO CF(CN309), DIGI IF(CN9902)
TO REG IF(CN308), CDS(CN5002,5003)
TO REG IF(CN306), LCD-SUB
TO REG IF(CN303), LITHIUM
TO REG IF(CN303), ANA IF(CN203), CAM DSP
TO REG IF(CN301), LCD DRV
TO REG IF(CN301), OPE1(CN209), LITHIUM,SUB CPU
TO REG IF(CN303), SUB CPU
TO REG IF(CN308), CDS(CN5003)
TO REG IF(CN302), SUB CPU
TO REG IF(CN303)
TO REG IF (CN303), SUB CPU
TO REG IF (CN303)
TO REG IF (CN308), CDS(CN5003)
TO REG IF (CN308), CDS(CN5003)
TO REG IF (CN308), CDS(CN5003)
TO REG IF (CN308), CDS(CN5003)
TO REG IF (CN303), SUB CPU
TO REG IF (CN303), SUB CPU
TO REG IF (CN303), SUB CPU

■ CCD SCHEMATIC DIAGRAM



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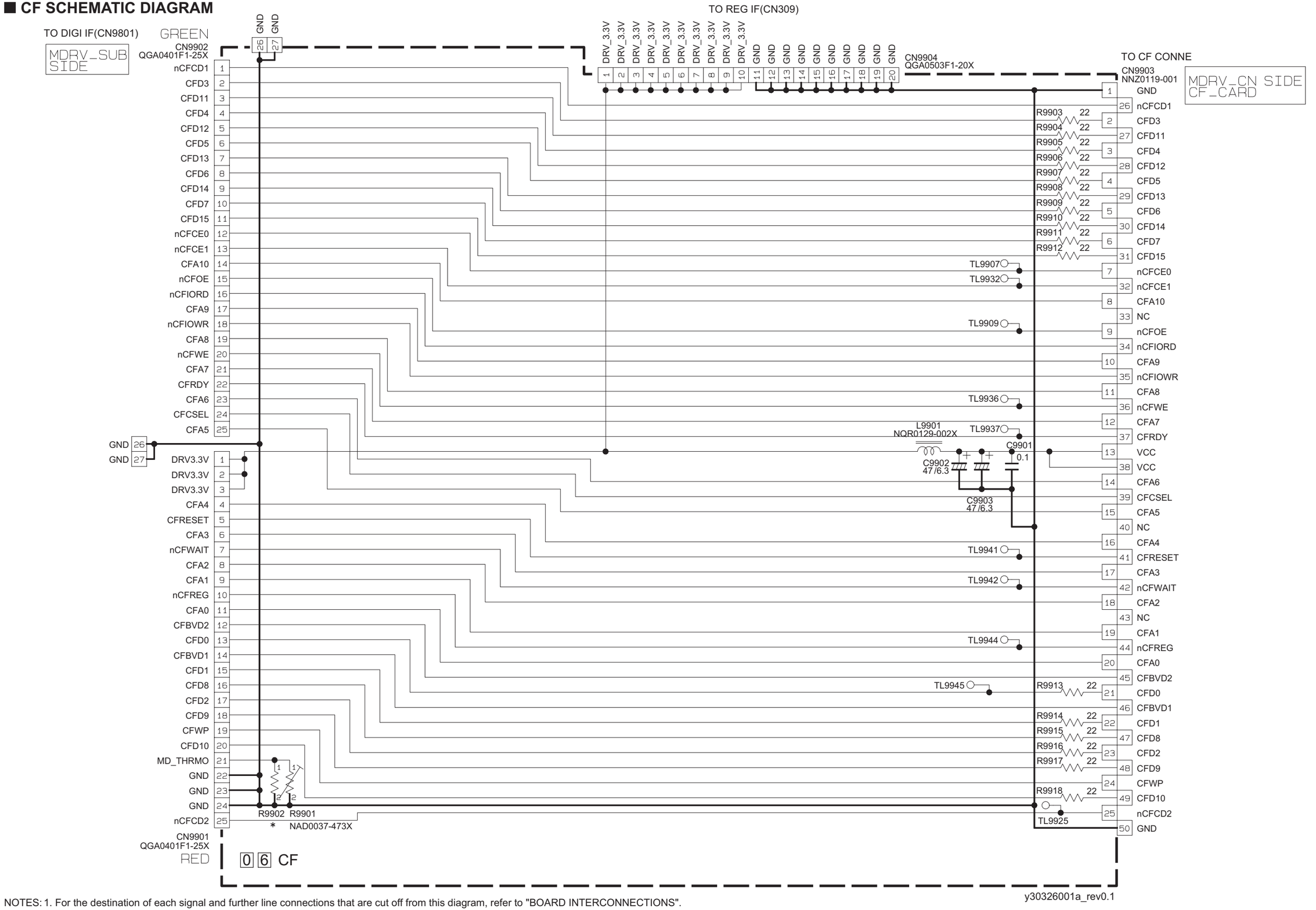
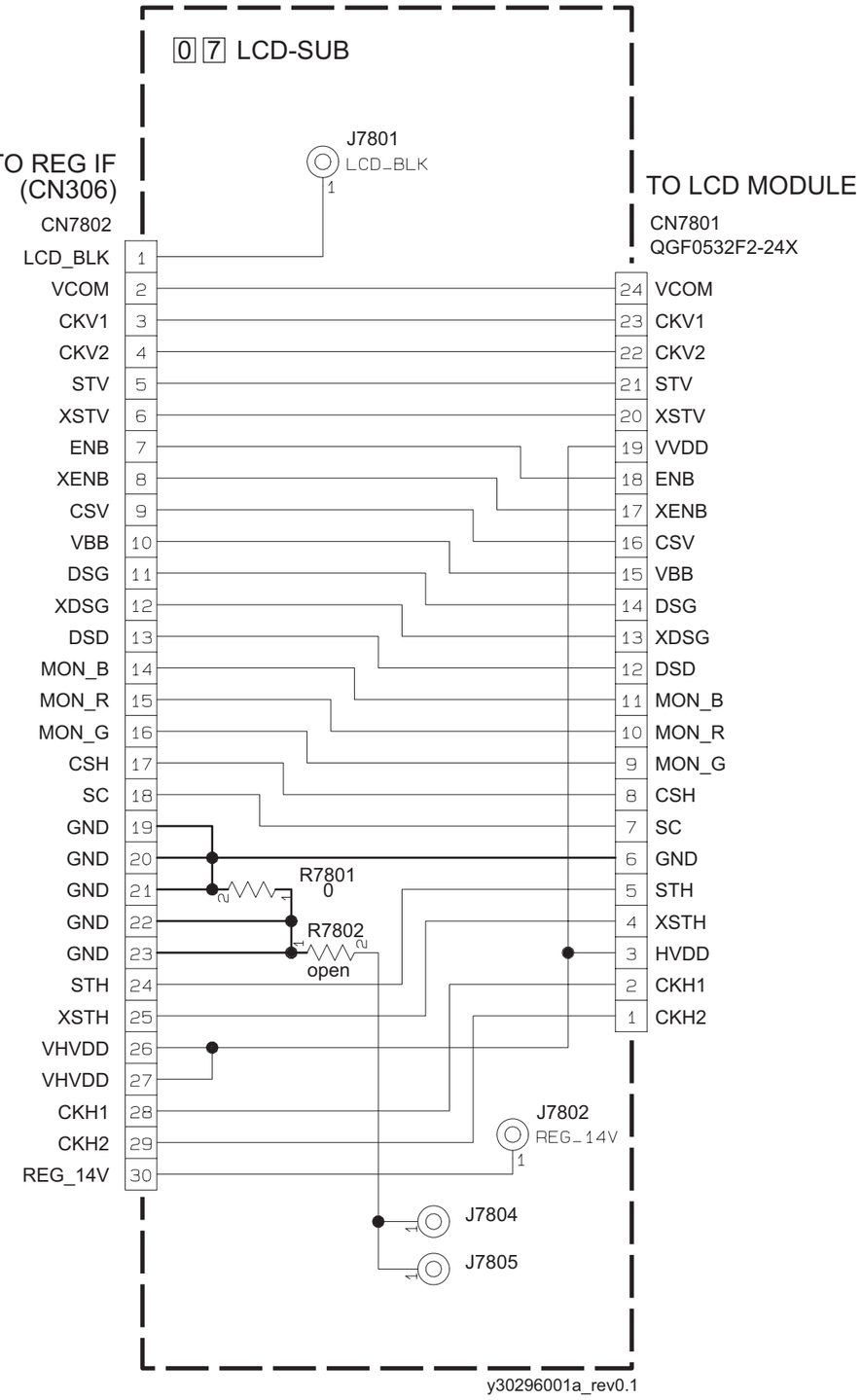
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.
3. IC5501 - 5503 are incorporated in the PRISM assembly. When IC5501 - 5503 needs replacement, replace the PRISM assembly in whole because it cannot be replaced alone.

■ CF SCHEMATIC DIAGRAM



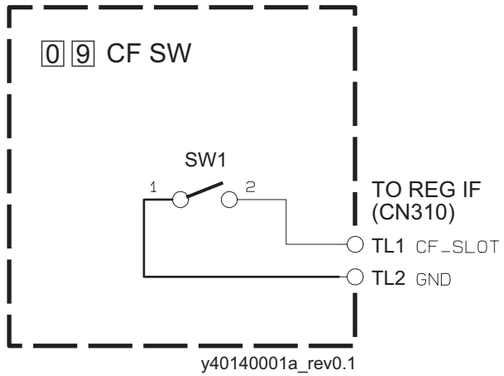
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ LCD-SUB SCHEMATIC DIAGRAM



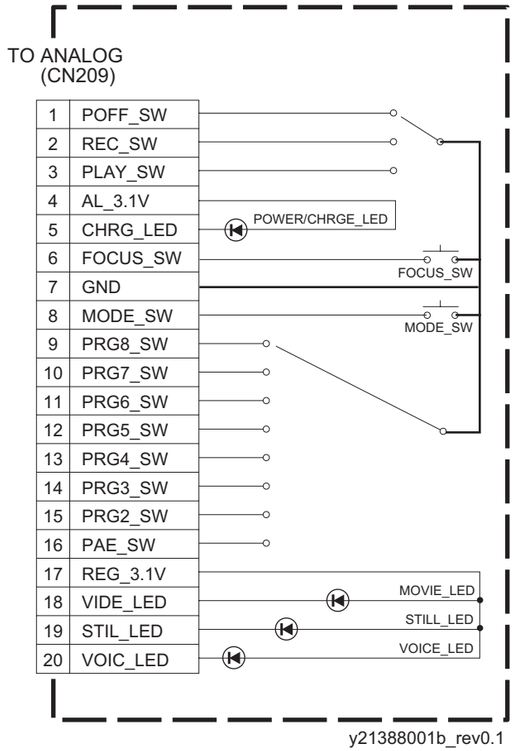
NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

■ CF SW SCHEMATIC DIAGRAM



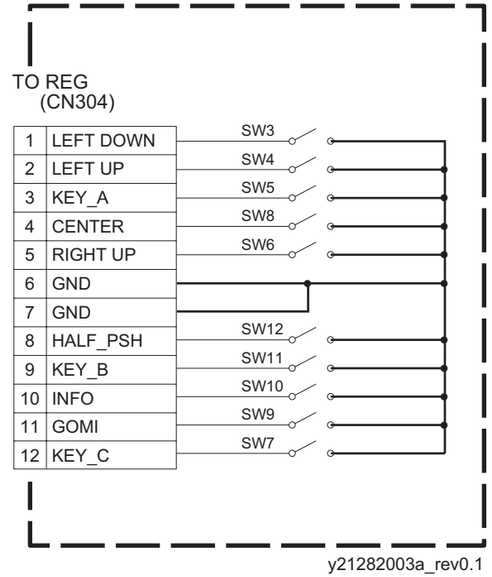
■ OPE1 (POWER UNIT)

NOTE: The schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



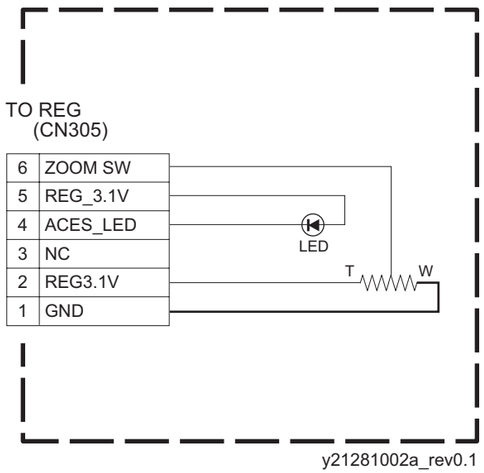
■ OPE2 (REAR UNIT)

NOTE: The schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



■ OPE3 (ZOOM UNIT)

NOTE: The schematic diagram is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.



NOTES: 1. For the destination of each signal and further line connections that are cut off from this diagram, refer to "BOARD INTERCONNECTIONS".
2. The parts with marked (∗) is not used.

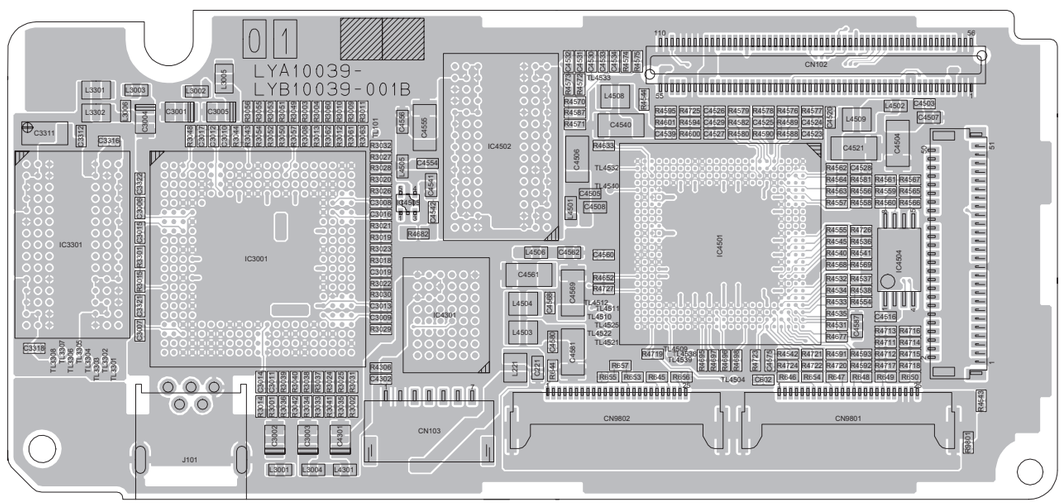
■ DIGITAL AND ANALOG CIRCUIT BOARDS

Lead free solder used in the board (material : Sn-Ag-Cu, melting point : 219 Centigrade)

CAUTION :
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE(S).
ATTENTION :
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE D'INCENDE,
REMPLACER LES FUSIBLES PAR UNAAUTRE DE MEME TYPE ET DE MEME TENSION.

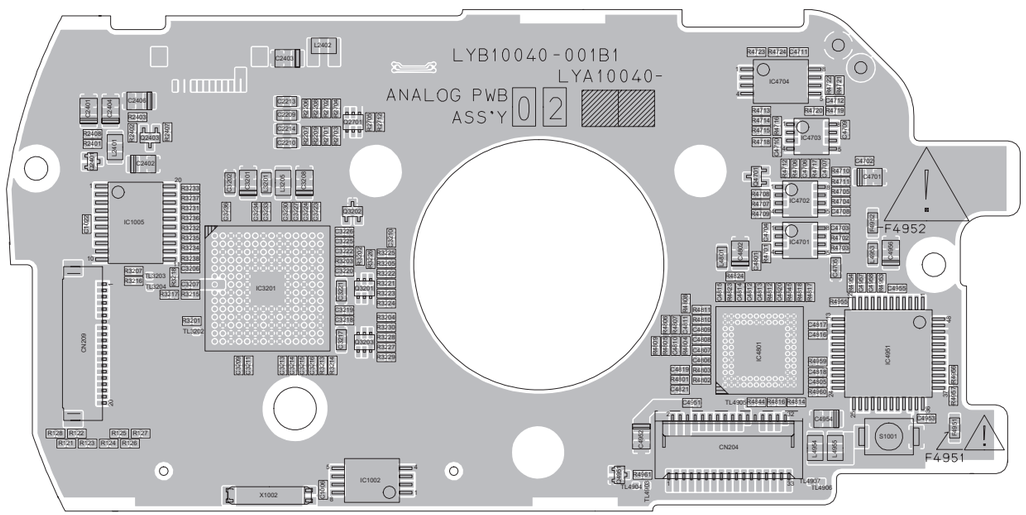
<01>DIGITAL
LYB10039-001B

FOIL SIDE(B)



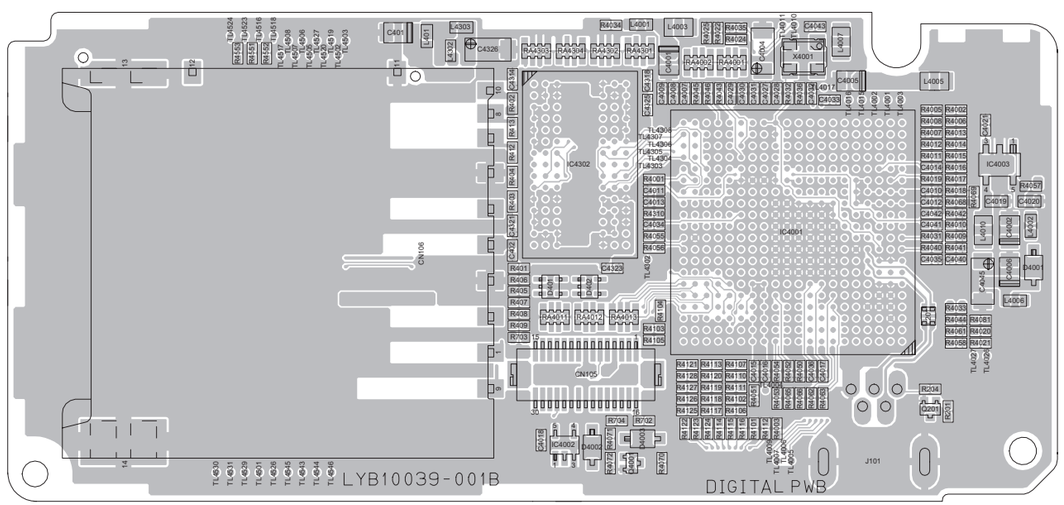
<02>ANALOG
LYB10040-001B

FOIL SIDE(B)



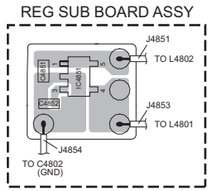
<01>DIGITAL
LYB10039-001B

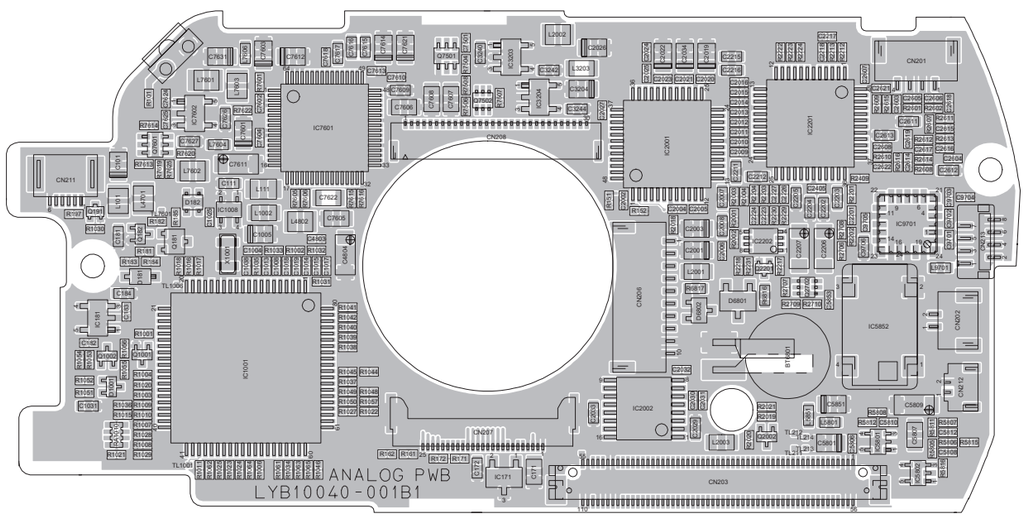
COMPONENT SIDE(A)



<02>ANALOG
LYB10040-001B

COMPONENT SIDE(A)





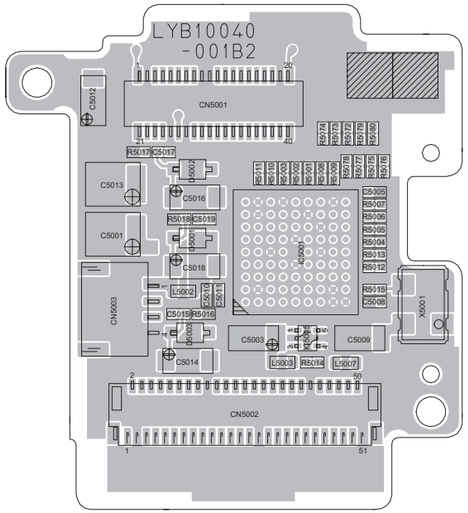
■ CDS, REG, CCD, CF CIRCUIT BOARDS

Lead free solder used in the board (material : Sn-Ag-Cu, melting point : 219 Centigrade)

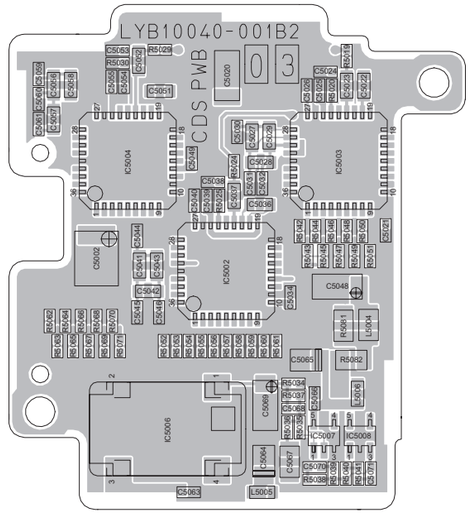
CAUTION :
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE(S).
ATTENTION :
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE D'INCENDE,
REMPLACER LES FUSIBLES PAR UNAAUTRE DE MEME TYPE ET DE MEME TENSION.

<03>CDS
LYB10040-001B

FOIL SIDE(B)

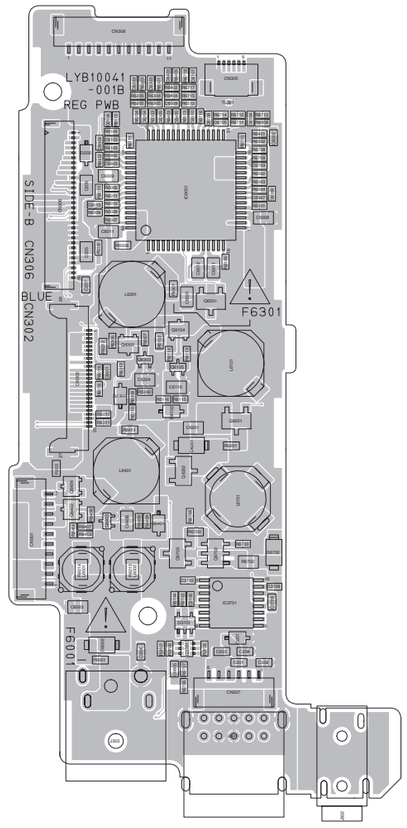


COMPONENT SIDE(A)

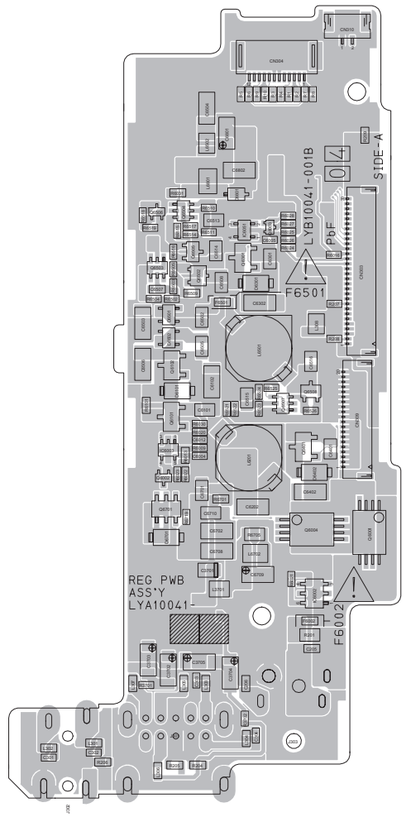


<04>REG
LYB10041-001B

FOIL SIDE(B)

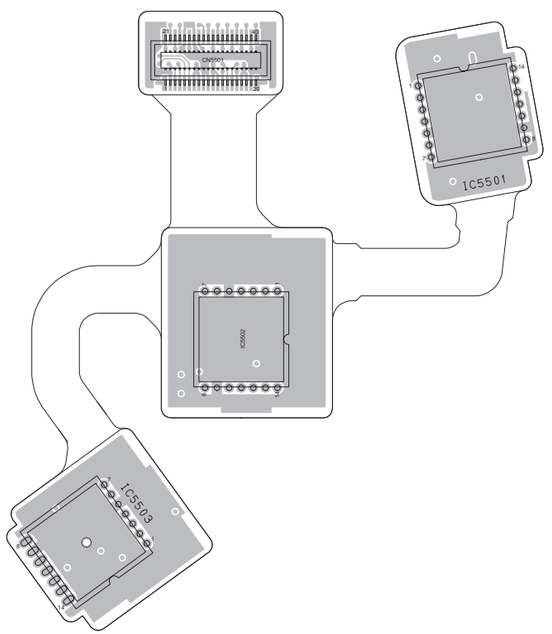


COMPONENT SIDE(A)

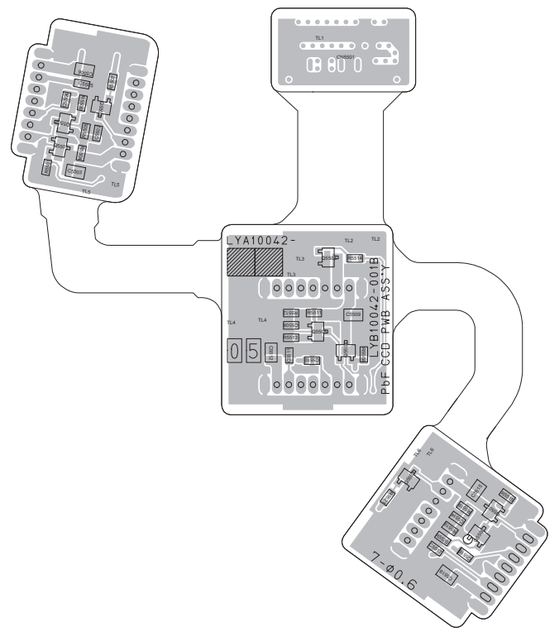


<05>CCD
LYB10042-001B

FOIL SIDE(B)

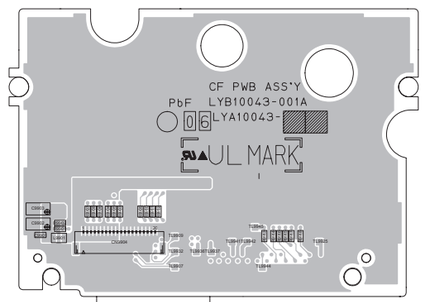


COMPONENT SIDE(A)

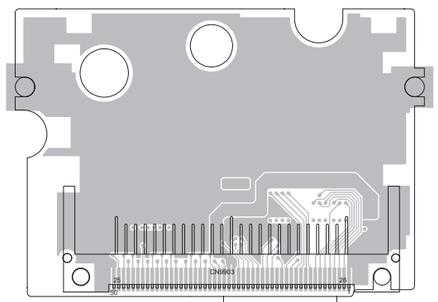


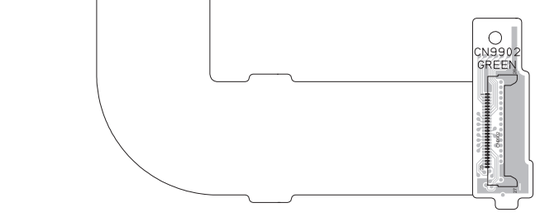
<06>CF
LYB10043-001A

FOIL SIDE(B)



COMPONENT SIDE(A)



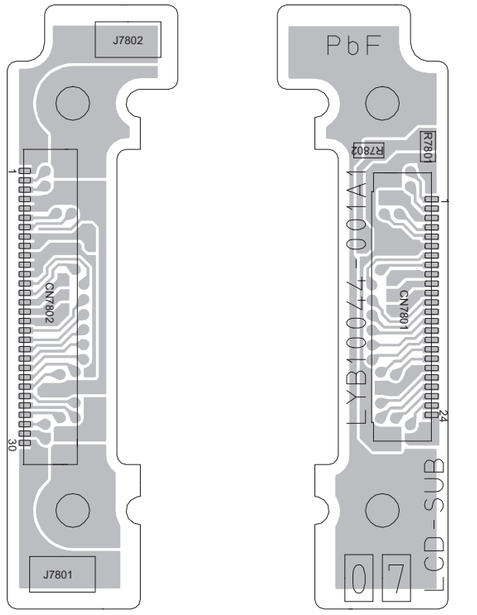


■ LCD-SUB AND CF SW CIRCUIT BOARDS

Lead free solder used in the board
(material : Sn-Ag-Cu, melting point : 219 Centigrade)

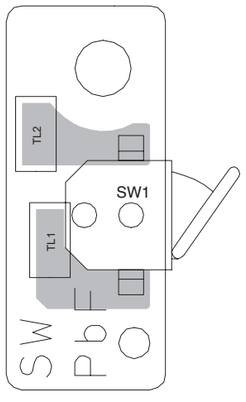
<07>LCD-SUB
LYB10044-001A

FOIL SIDE(B) **COMPONENT SIDE(A)**



<09>CF SW
LYB10044-001A

COMPONENT SIDE(A)



■ VOLTAGE CHARTS

<DIGITAL>

MODE PIN NO.	REC	PLAY
IC3001	-	-
IC3301	-	-
IC4001	-	-
IC4002		
1	3.1	3.1
2	3.1	3.1
3	0	0
4	0	0
5	3.1	3.1
IC4003		
1	4.8	4.8
2	0	0
3	1.3	1.3
4	3.3	3.3
5	4.8	4.8
IC4301	-	-
IC4302	-	-
IC4501	-	-
IC4502	-	-
IC4504		
1	3.1	3.1
2	3.1	3.1
3	3.1	3.0
4	0.7	1.3
5	3.0	3.1
6	0	0
7	0	0
8	3.1	3.1
Q201		
E	0	0
C	3.0	3.1
B	0	0
Q4001		
E	0	0
C	0.6	1.4
B	0	0

<ANALOG>

MODE PIN NO.	REC	PLAY
IC171		
1	3.3	3.3
2	10.9	11.0
3	0	0
IC181		
1	2.8	3.1
2	0	0
3	1.2	1.2
4	4.6	4.5
5	4.8	4.8
IC1001		
1	0	0
2	2.3	2.3
3	3.1	3.1
4	3.0	3.1
5	0	0
6	3.1	3.1
7	0	0
8	3.1	3.1
9	3.0	3.0
10	3.1	3.1
11	3.1	3.0
12	1.5	1.5
13	1.5	1.5
14	0	0
15	0	0
16	3.0	2.8
17	0	0
18	3.1	3.0
19	3.0	3.0
20	3.0	3.0
21	1.5	1.4
22	0.2	1.7
23	2.9	3.0
24	3.1	3.0
25	0	3.0
26	3.0	3.0
27	3.0	3.0
28	0	0
29	0	0
30	3.0	3.1
31	0	3.0
32	0	0
33	0	0
34	3.0	3.0
35	3.0	3.1
36	2.9	2.9
37	0	0
38	2.9	2.9
39	0	0
40	0	0
41	3.1	3.0
42	3.1	3.1
43	0.2	1.0
44	2.9	2.9
45	0	0
46	0	0
47	3.0	3.0
48	0	0
49	0	3.0
50	3.0	3.0
51	0	3.1
52	3.1	3.1
53	0	0
54	0	2.6
55	3.1	3.1
56	3.1	3.1
57	3.1	3.1
58	0	0
59	3.0	3.1
60	2.8	2.8
61	2.9	2.9
62	3.0	0
63	3.0	3.0
64	0	0
65	0	0
66	3.1	3.0
67	3.1	3.1
68	3.0	3.1
69	3.0	3.1
70	0	3.0
71	3.0	3.1
72	3.1	3.0
73	0	0
74	0	0
75	0.1	0.2
76	3.1	3.0
77	3.1	3.1
78	3.0	2.6
79	0	0
80	0	0
IC1002		
1	0	0
2	3.1	3.1
3	3.0	3.0
4	0	0
5	0.5	1.2

MODE PIN NO.	REC	PLAY
6	0.6	0.6
7	0.4	0.6
8	3.0	3.0
IC1005		
1	3.0	2.9
2	2.7	2.8
3	2.8	2.9
4	3.0	3.1
5	3.1	3.1
6	3.1	3.1
7	0	0
8	1.4	1.5
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	2.7
15	0	0
16	0	0
17	0	0
18	0	0
19	0	3.0
20	2.8	2.9
IC1008		
1	0	0
2	0	0
3	3.1	3.1
4	3.0	3.0
IC2001		
1	3.1	3.1
2	0.4	0.8
3	2.6	2.5
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	3.0	3.0
10	3.1	3.1
11	0	3.1
12	0	1.5
13	1.5	1.6
14	1.5	1.5
15	1.5	1.5
16	1.5	1.5
17	1.5	1.5
18	0.7	0.7
19	0	0
20	0.7	0.7
21	1.5	1.5
22	1.5	1.5
23	1.5	1.5
24	1.5	1.5
25	3.1	3.0
26	0	0
27	1.5	1.5
28	1.5	1.5
29	0	0
30	0	0
31	0	0
32	1.5	1.5
33	1.6	1.5
34	1.5	1.6
35	1.5	1.5
36	1.5	1.5
37	1.5	1.5
38	3.1	3.1
39	1.5	1.5
40	0	0
41	1.6	1.6
42	0	0
43	0	0
44	0	0
45	3.1	3.0
46	0	0
47	0	0
48	0	0
IC2002		
1	0.7	0.8
2	0	0
3	0.8	0.8
4	0.8	0.8
5	0.8	0.8
6	0	0
7	0.3	0.3
8	0.2	0.2
9	0.4	0.4
10	0.2	0.3
11	0	0
12	0.8	0.7
13	0.3	0.4
14	0	0.2
15	0.3	0.3
16	0.3	0.2
IC2201		
1	0	1.5

MODE PIN NO.	REC	PLAY
2	0	0
3	0	1.5
4	3.0	3.0
5	3.1	3.1
6	0	0
7	1.5	1.5
8	1.4	1.3
9	1.5	1.5
10	2.9	2.9
11	3.0	2.9
12	2.9	2.9
13	0	1.5
14	1.6	1.5
15	3.0	2.7
16	0	0
17	1.5	1.4
18	1.4	0.4
19	1.5	1.4
20	0	1.4
21	1.5	1.4
22	0	0.6
23	1.5	1.3
24	0	0.6
25	0	1.5
26	0	0
27	0	0
28	4.8	4.8
29	0	0
30	2.4	2.4
31	0	0
32	3.1	3.0
33	1.5	1.5
34	0.4	1.4
35	0.4	1.5
36	1.3	1.5
37	1.5	1.5
38	1.5	1.4
39	1.5	1.4
40	1.5	0
41	0	0
42	4.1	4.4
43	2.7	0
44	4.0	4.4
45	1.5	0.2
46	1.5	1.3
47	1.5	1.4
48	1.5	1.5
IC2202		
1	1.6	1.6
2	1.6	1.6
3	0	3.1
4	0	0
5	1.5	1.5
6	1.6	1.5
7	3.1	0
8	3.1	3.1
IC3201	-	-
IC3203	-	-
IC3204	-	-
IC4701		
1	2.8	2.8
2	2.3	2.2
3	2.3	2.3
4	0	0
5	2.3	2.2
6	2.3	2.3
7	2.3	2.3
8	4.6	4.5
IC4702		
1	0.8	0.8
2	0.1	0.2
3	0.1	0.1
4	0	0
5	2.2	2.3
6	2.3	2.2
7	0	0.6
8	4.6	4.5
IC4703		
1	0	0.2
2	0.6	0.6
3	0.6	0.7
4	0	0
5	0	0
6	0	0
7	0	0
8	4.6	4.6
IC4704		
1	1.8	1.8
2	2.3	2.3
3	2.3	2.3
4	0	0
5	2.3	2.3
6	2.3	2.3
7	2.5	2.7
8	4.6	4.6
IC4801	-	-
IC4951		

MODE PIN NO.	REC	PLAY
1	1.3	3.1
2	1.5	0
3	0	0
4	0	0
5	0	0
6	3.1	3.1
7	0	0
8	3.0	3.1
9	0.5	0.2
10	3.0	3.0
11	1.5	1.5
12	3.0	3.1
13	4.8	4.8
14	0	0
15	0	0
16	0	0
17	3.8	0.6
18	4.8	4.8
19	0	0
20	0	0
21	0	0
22	0.8	0.6
23	0.8	0.6
24	0	0
25	3.5	0.6
26	4.8	4.9
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	4.8	4.8
36	0.7	0.6
37	0	0
38	0.6	0
39	0	0
40	0	0
41	0	0
42	0	0
43	4.8	4.8
44	0.7	0
45	0	0
46	0	0
47	0	0
48	4.8	4.9
IC5801		
1	1.2	1.3
2	0	0
3	1.3	1.3
4	1.3	1.2
5	3.1	3.1
IC5802		
1	0.4	0.9
2	0.3	0.9
3	0	0
4	0	0
5	3.1	3.1
IC5852		
1	1.3	1.3
2	0	0
3	3.1	3.1
4	1.2	1.3
IC7601		
1	2.9	2.9
2	1.3	1.3
3	0	0
4	0	0
5	2.9	2.9
6	3.0	3.0
7	2.9	3.0
8	2.9	2.9
9	0	3.0
10	0	0
11	2.8	2.9
12	2.9	2.9
13	2.9	2.9
14	0	0
15	0.3	0.2
16	0	0
17	2.9	2.8
18	0	0
19	1.4	1.4
20	1.4	1.4
21	0	0
22	0	0
23	2.7	2.7
24	0	0.2
25	2.8	2.9
26	0	0
27	1.4	1.5
28	1.4	1.4
29	0.3	0.3
30	2.6	2.6
31	0	0

MODE PIN NO.	REC	PLAY
32	0	0
33	0	0
34	8.6	8.5
35	8.6	8.5
36	1.4	1.4
37	0	0
38	3.2	3.2
39	8.6	8.5
40	3.5	3.5
41	1.3	1.3
42	0	0
43	3.5	3.5
44	1.3	1.3
45	0	3.5
46	1.3	1.2
47	0	8.6
48	4.2	4.2
49	2.9	2.9
50	3.5	3.5
51	0	0.3
52	1.9	2.0
53	1.3	1.3
54	1.2	1.3
55	1.2	1.2
56	2.9	2.8
57	2.9	2.9
58	0.2	2.9
59	3.1	3.0
60	2.8	2.8
61	0	0
62	0	0
63	0	0
64	0	0
IC7602		
1	3.1	3.1
2	0	0
3	1.2	1.2
4	2.9	2.7
5	3.1	3.1
Q101		
E	4.8	4.8
C	0	0
B	-	-
Q181		
S	0	0
D	4.8	4.8
G	4.8	4.8
Q182		
E	0	0
C	0	0
B	0.6	0.6
Q191		
E	0	0
C	3.4	4.0
B	0	0
Q1001		
E	0	0
C	0	0
B	3.0	3.0
Q1002		
E	0	0
C	3.0	3.1
B	0.5	0.5
Q2002		
E	3.1	3.1
C	0.8	0.8
B	3.1	3.1
Q2201		
E	0	0
C	3.1	0
B	0	3.1
Q2401		
E	4.1	4.5
C	4.8	4.8
B	4.7	4.8
Q2403		
E	3.1	3.0
C	4.7	4.9
B	3.7	3.7
Q2701		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
Q2702		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
Q3201		
1	1.1	1.1
2	0.5	0.6
3	0	0

MODE PIN NO.	REC	PLAY
4	1.3	1.3
5	0.7	0.7
6	0	0
Q3202		
E	0.7	0.6
C	0	0
B	0	0
Q3203		
1	0.7	0.7
2	0	0
3	0	0
4	0.7	0.7
5	0	0
6	0	0
Q4701		
E	0.1	0.1
C	1.7	1.7
B	0	0.8
Q4951		
E	0	0
C	3.7	3.7
B	0	0
Q7501	-	-
Q7502	-	-

<CDS>

MODE PIN NO.	REC	PLAY
IC5001	-	-
IC5002		
1	0.6	0
2	0.3	0
3	0.1	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	1.0	3.0
10	3.0	3.1
11	0	0
12	1.5	0
13	3.0	3.1
14	2.6	0
15	3.0	0
16	2.3	0
17	2.3	0
18	0	0
19	3.0	3.1
20	1.9	0
21	1.9	0
22	1.9	1.7
23	2.0	0
24	1.1	0
25	3.0	3.1
26	0	0
27	0	0
28	1.4	0
29	1.9	0
30	0.9	0
31	3.0	3.1
32	0	0
33	3.0	3.1
34	0.5	0.3
35	3.0	3.0
36	1.3	3.1
IC5003		
1	0.6	3.1
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0.1	0
9	1.0	3.2
10	2.9	3.1
11	0	0
12	1.4	0
13	3.0	3.1
14	2.6	0
15	3.0	0
16	2.2	0
17	2.3	0
18	0	0
19	3.0	3.0
20	1.9	0
21	1.9	0
22	1.9	1.6
23	1.9	0
24	1.2	0
25	3.0	3.1
26	0	0
27	0.5	0
28	1.4	0
29	0	0
30	0.9	0
31	2.8	3.1
32	0	0
33	3.1	3.1
34	0.5	0.3
35	3.1	3.0
36	1.1	0
IC5004		
1	0.5	3.1
2	0.2	3.1
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0.8	3.1
10	3.1	3.1
11	0	0
12	1.5	0
13	3.0	3.1
14	2.6	0
15	3.0	0
16	2.3	0
17	0	0
18	0	0
19	3.1	3.1
20	1.9	0
21	1.9	0

MODE PIN NO.	REC	PLAY
22	1.9	1.6
23	1.9	0
24	1.2	0
25	3.1	3.1
26	0	0
27	0.2	0
28	1.4	0
29	1.9	0
30	0.9	0
31	3.0	3.1
32	0.5	0.3
33	3.1	3.1
34	0.5	0.3
35	3.0	3.0
36	1.2	0
IC5006		
1	1.3	1.3
2	0	0
3	3.1	3.1
4	1.4	1.2
IC5007		
1	0.2	0.8
2	0.3	0.8
3	0	0
4	0	0
5	3.1	3.1
IC5008		
1	1.3	1.3
2	0	0
3	1.3	1.3
4	1.3	1.4
5	3.1	3.1

<REG>

MODE PIN NO.	REC	PLAY
IC3701		
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	4.8	4.8
10	0	0
11	0	0
12	0	0
13	0	0
14	1.0	0.8
15	4.8	4.8
16	0	0
IC6001		
1	0	0
2	10.1	10.1
3	8.4	8.4
4	9.7	9.8
5	8.0	8.1
6	7.9	8.0
7	7.9	8.1
8	8.2	8.2
9	0	0
10	0	0
11	10.7	10.7
12	11.9	12.0
13	8.5	8.5
14	0	0
15	2.6	2.6
16	0	0
17	0	0
18	3.1	3.1
19	10.9	11.0
20	11.0	11.0
21	0	0
22	0	0
23	3.1	3.1
24	3.0	3.0
25	3.1	3.1
26	3.1	3.0
27	3.0	3.0
28	3.1	3.1
29	1.0	1.0
30	0	0
31	0	0
32	0	0
33	0	0
34	2.7	2.7
35	0	0
36	0	0
37	1.0	1.0
38	0.8	0.8
39	1.0	1.0
40	0.8	0.7
41	1.0	1.0
42	1.0	1.0
43	0.6	0.6

MODE PIN NO.	REC	PLAY
44	1.0	1.0
45	1.0	0.9
46	0.8	0.8
47	1.1	1.0
48	0.7	0.7
49	1.0	1.0
50	0.5	0.6
51	0.6	0.6
52	1.0	1.0
53	0	0
54	0	0
55	1.0	1.0
56	0	0
57	0	0
58	0	0
59	2.6	2.7
60	0	0
61	15.1	15.0
62	10.7	10.8
63	1.2	1.3
64	11.0	11.0
IC6002		
1	0	0
2	0	0
3	0	0
4	5.8	5.8
5	10.8	10.9
6	11.0	11.0
IC6003		
1	1.6	1.6
2	0	0
3	1.9	2.0
4	0	0
5	3.1	3.1
IC6051		
1	1.0	1.0
2	9.8	9.8
3	0	0
4	0	0
Q3701		
1	0	0
2	0	0
3	0	0
4	4.8	4.8
5	4.4	4.4
6	0	4.4
Q6001		
1	0	0
2	10.9	11.0
3	11.0	11.0
4	10.8	10.9
5	0	0
6	11.0	11.0
7	11.0	11.0
8	0	0
Q6002		
E	0	0
C	3.0	3.1
B	0	0
Q6004		
1	10.9	11.0
2	11.0	11.0
3	11.0	11.0
4	5.8	5.8
5	10.9	11.0
6	11.0	11.0
7	10.9	11.0
8	11.0	11.0
Q6101		
S	10.1	10.2
D	10.9	11.0
G	1.2	1.2
Q6102		
S	8.4	8.5
D	0	0
G	1.2	1.2
Q6201		
S	9.7	9.8
D	11.0	11.0
G	1.6	1.5
Q6202		
S	8.0	8.1
D	0	0
G	1.6	1.6
Q6301		
S	7.9	8.1
D	11.0	11.0
G	3.3	3.3
Q6302		
S	0	0
D	3.3	3.3
G	3.3	3.3
Q6303		
E	0	0
C	0	0
B	0.7	0.7
Q6401		

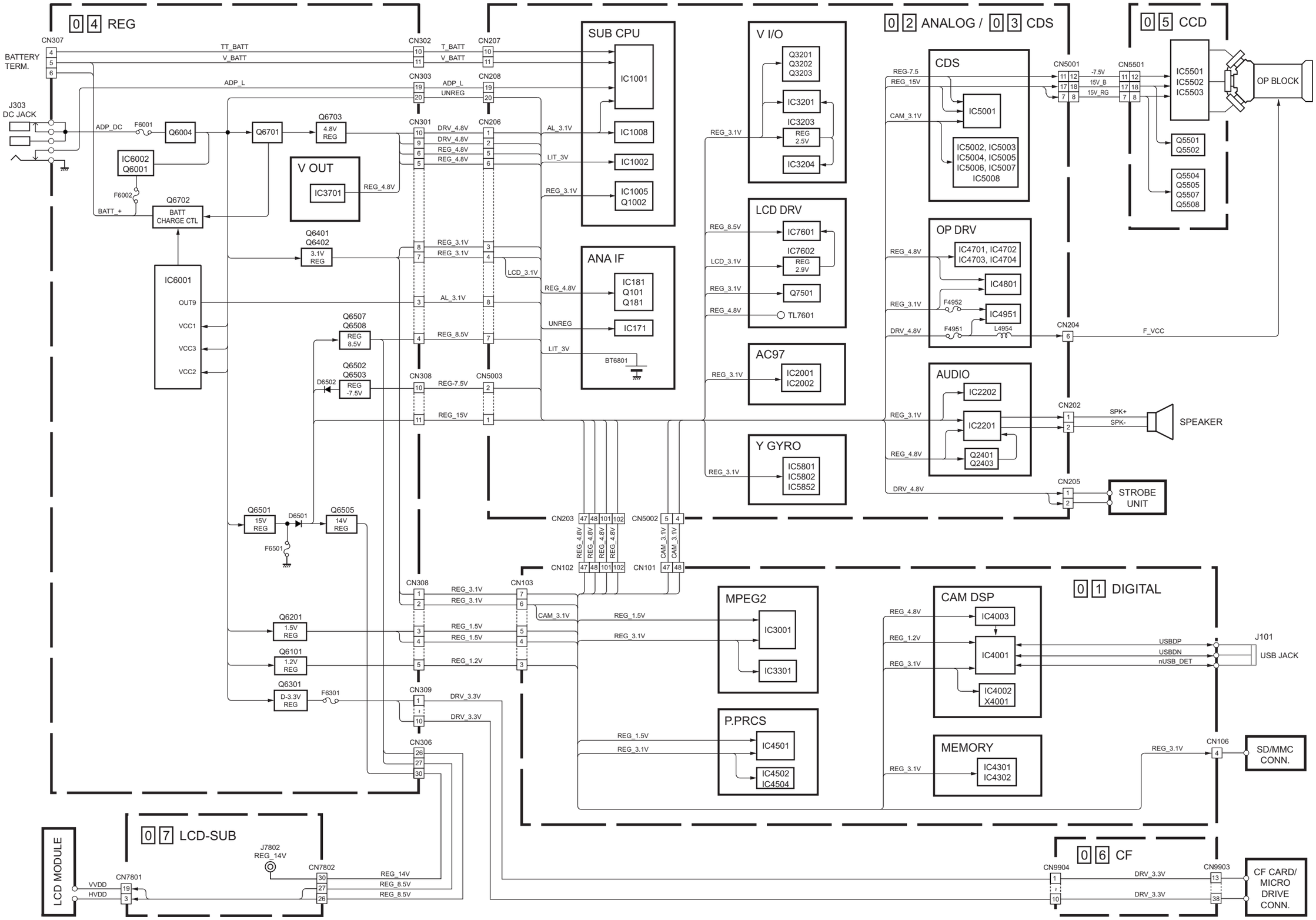
MODE PIN NO.	REC	PLAY
S	7.9	8.1
D	10.9	11.0
G	3.2	3.1
Q6402		
S	0	0
D	3.1	3.1
G	3.1	3.1
Q6403		
E	0	0
C	0	0
B	0.7	0.7
Q6404		
S	0	0
D	3.0	3.1
G	3.1	3.1
Q6501		
S	8.2	8.1
D	11.0	11.0
G	0	0
Q6502		
E	-15.3	-15.4
C	-7.3	-7.4
B	-14.8	-15.1
Q6503		
1	-6.8	-6.9
2	-7.3	-7.4
3	-14.8	-15.3
4	-6.8	-6.8
5	-7.2	-7.3
6	-15.3	-15.4
Q6504		
1	6.1	6.2
2	6.7	6.7
3	14.41	14.4
4	6.1	6.2
5	6.7	6.7
6	15.0	15.0
Q6505		
E	15.0	15.0
C	14.1	14.1
B	14.4	14.4
Q6506		
E	0	0
C	15.0	15.0
B	-1.0	-1.1
Q6507		
1	8.0	8.0
2	8.6	8.6
3	14.5	14.3
4	8.0	8.0
5	8.5	8.5
6	15.0	15.0
Q6508		
E	15.0	15.0
C	8.5	8.5
B	14.4	14.5
Q6701		
1	4.8	4.9
2	4.8	4.9
3	9.0	7.9
4	11.0	11.0
5	4.8	4.9
6	4.8	4.8
Q6702		
1	0	0
2	0	0
3	9.7	9.7
4	4.9	4.8
5	0	0
6	0	0
Q6703		
S	0	0
D	4.8	4.8
G	4.8	4.8

<CCD>

MODE PIN NO.	EE
IC5501	
1	-6.9
2	-0.3
3	-0.2
4	-6.9
5	0
6	9.9
7	15.0
8	10.9
9	0
10	12.2
11	1.6
12	1.2
13	9.4
14	-7.3
IC5502	
1	-6.9
2	-0.2
3	-0.2
4	0
5	0
6	9.5
7	15.0
8	10.9
9	0
10	12.0
11	1.6
12	1.2
13	9.1
14	-7.3
IC5503	
1	-6.9
2	-0.2
3	-0.3
4	-6.9
5	0
6	9.5
7	15.0
8	10.9
9	0
10	12.1
11	1.5
12	1.2
13	9.1
14	-7.4
Q5502	
E	7.2
C	10.9
B	7.9
Q5503	
E	0
C	9.9
B	0
Q5505	
E	7.2
C	11.0
B	8.0
Q5506	
E	0
C	9.5
B	0
Q5508	
E	7.2
C	10.9
B	8.0
Q5509	
E	0
C	9.6
B	0

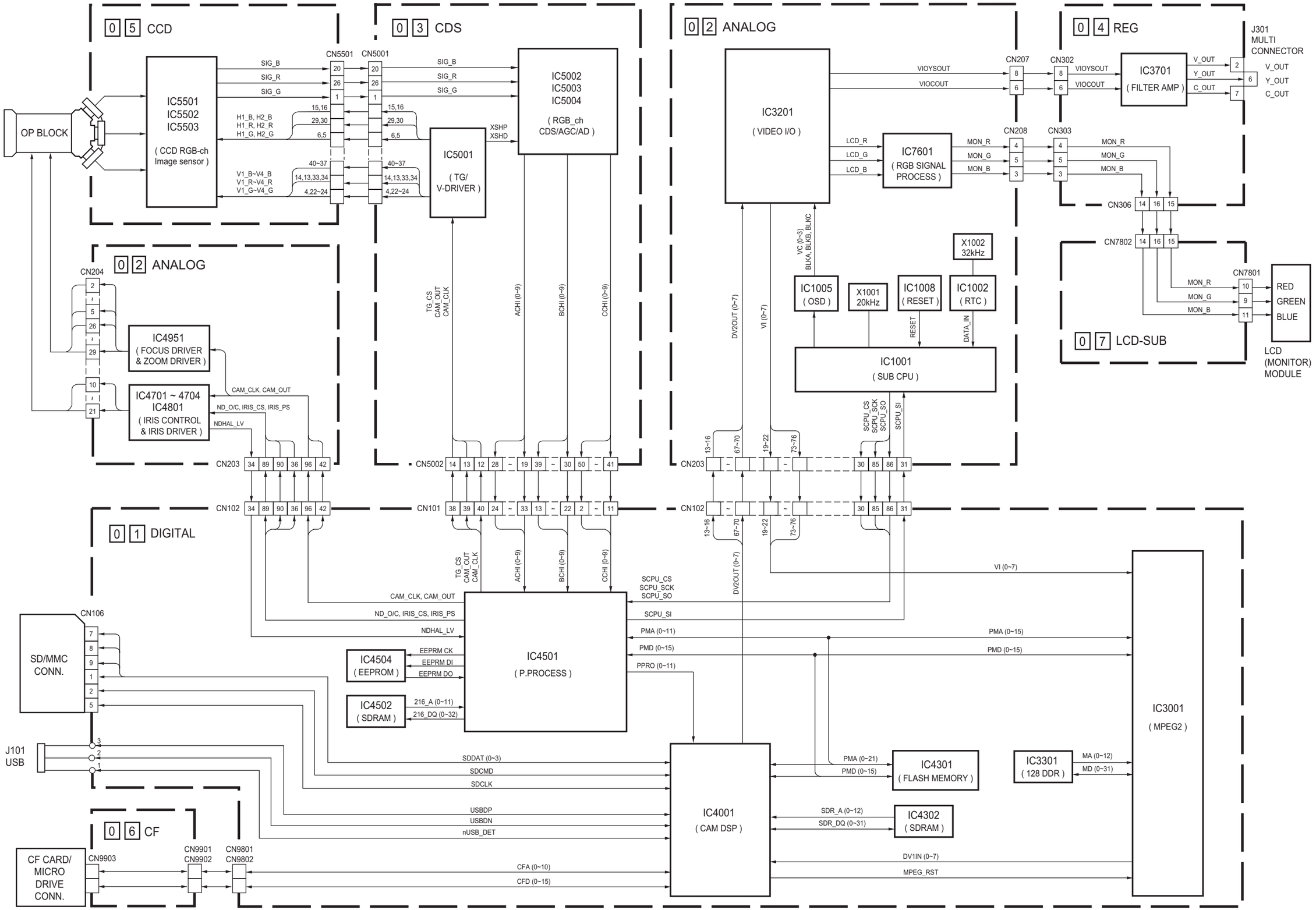
■ POWER SYSTEM BLOCK DIAGRAM

NOTES: There are circuits or functions that are not used according to the models. Please check with the Parts List.



■ VIDEO SYSTEM BLOCK DIAGRAM

NOTES: There are circuits or functions that are not used according to the models. Please check with the Parts List.



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(No.YF101)

Printed in Japan
VPT

PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

BEWARE OF BOGUS PARTS

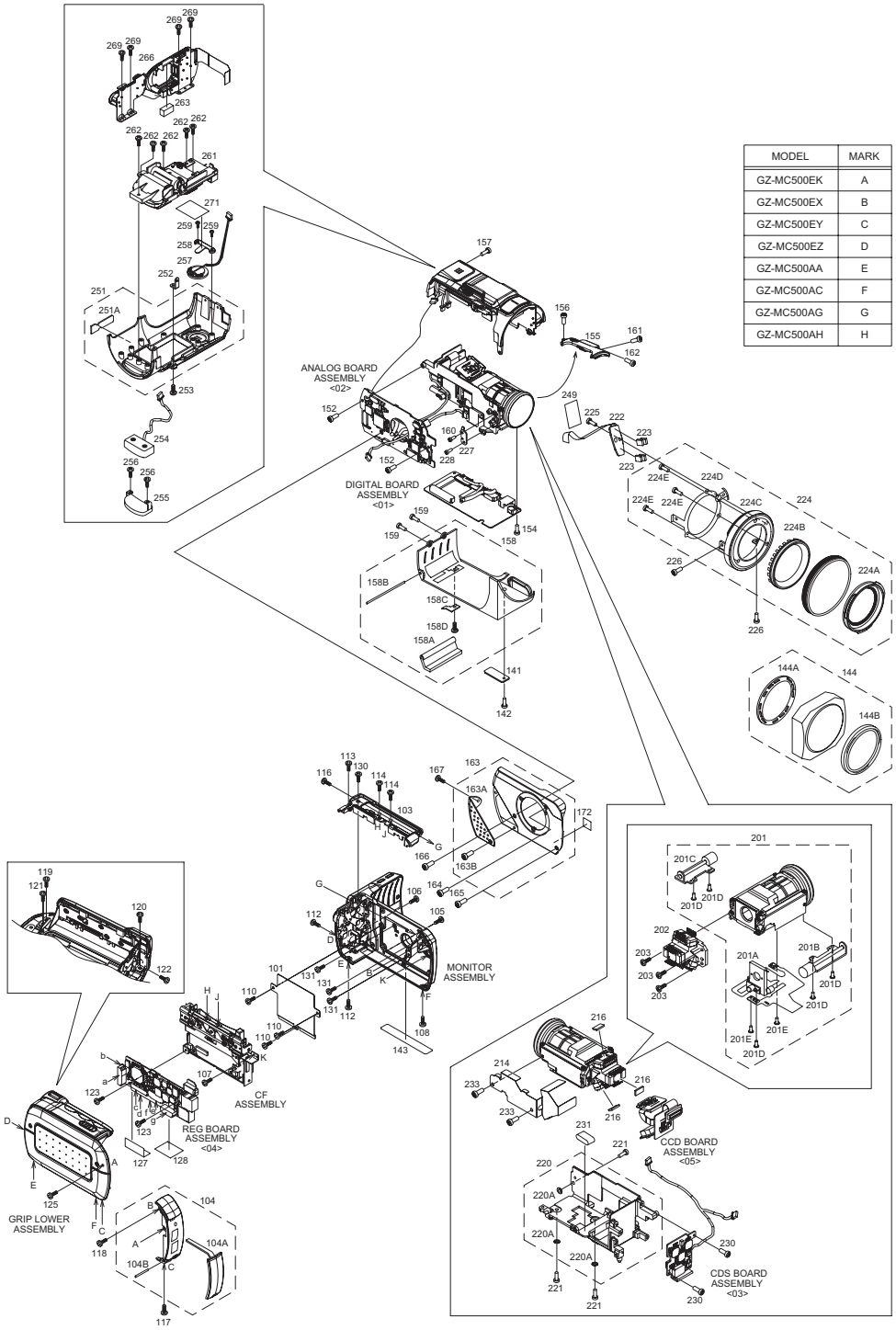
Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.

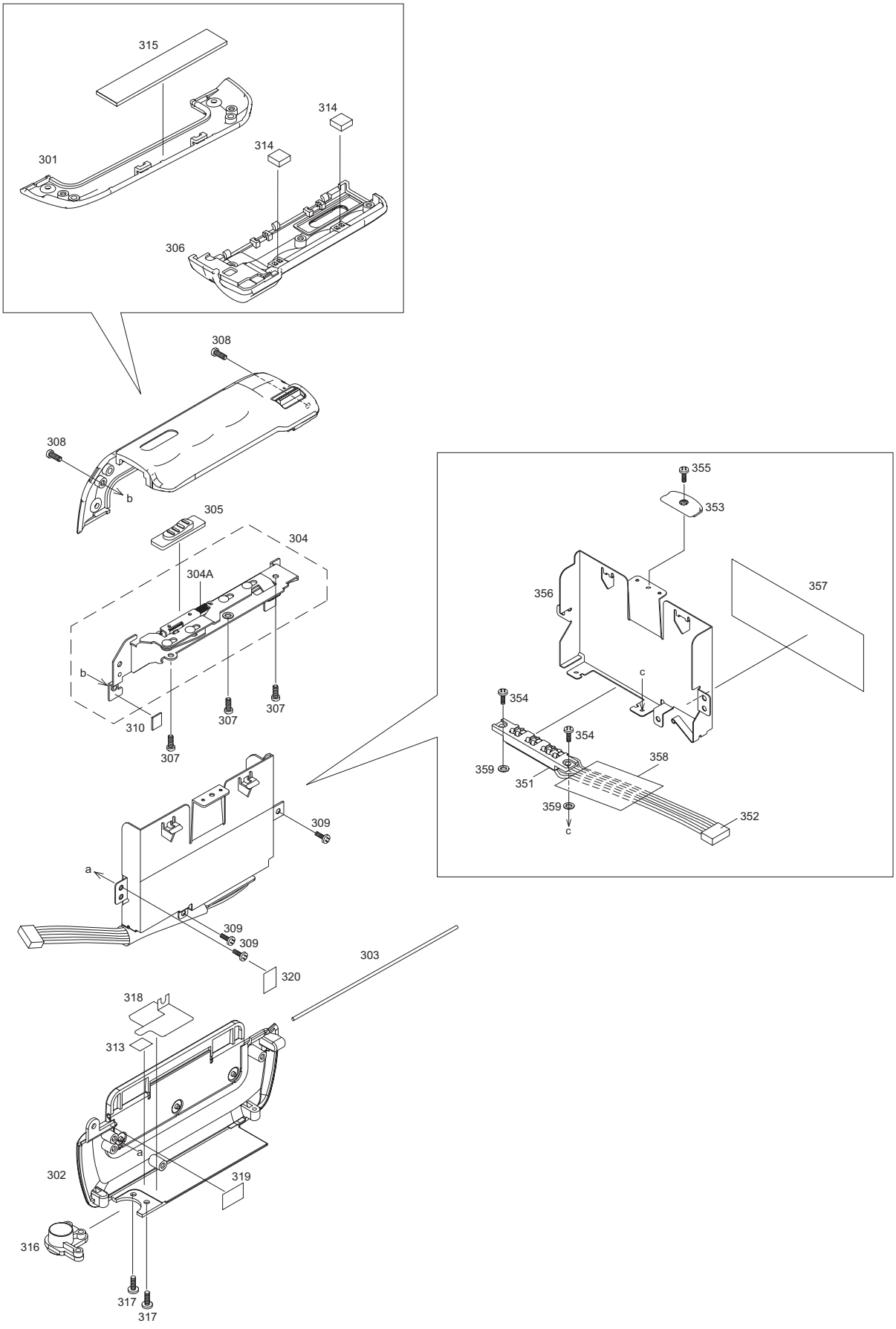
1. EXPLODED VIEW

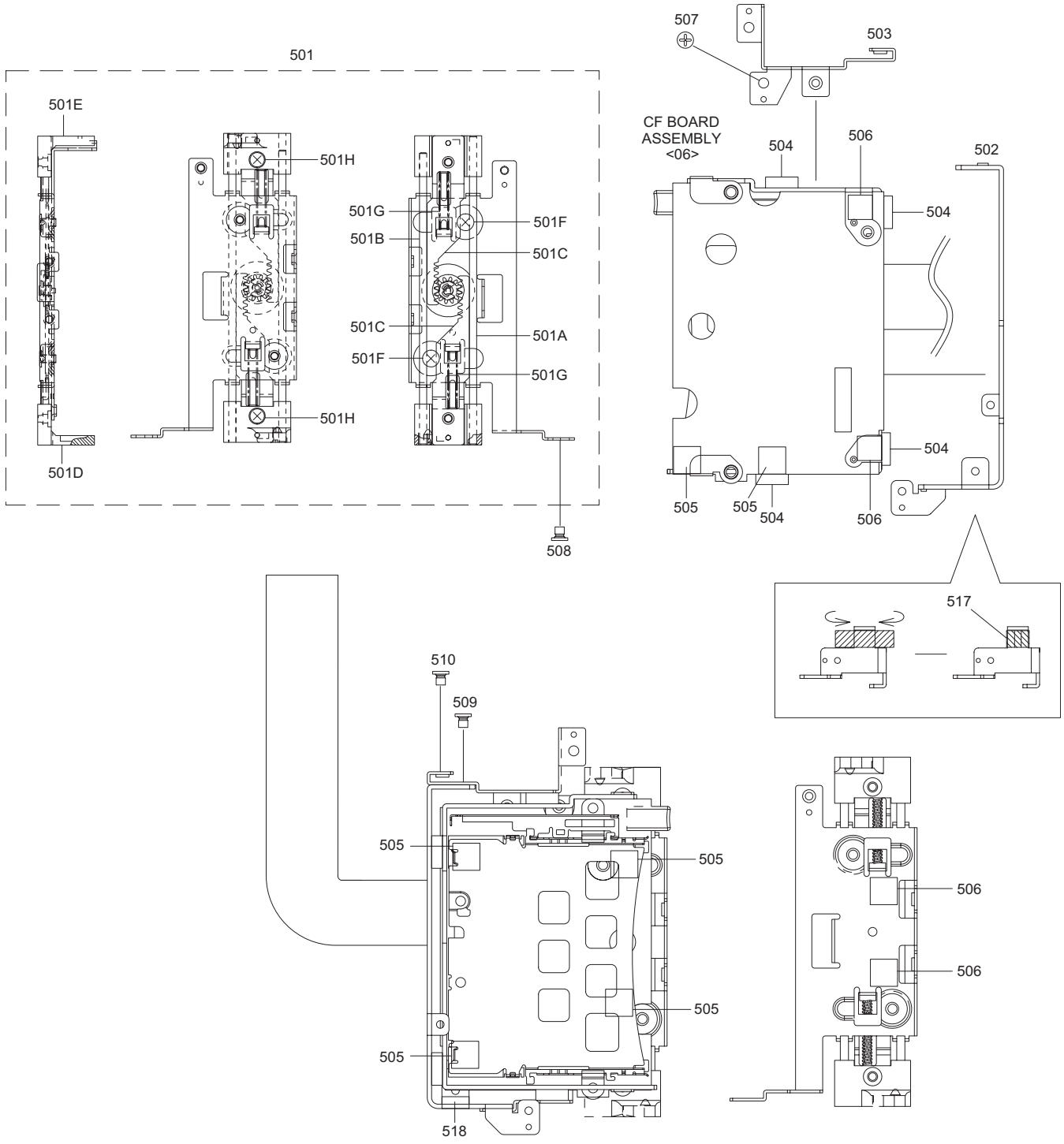
1.1 FINAL ASSEMBLY<M1>

The instruction manual to be provided with this product will differ according to the destination.

MODEL	MARK
GZ-MC500EK	A
GZ-MC500EX	B
GZ-MC500EY	C
GZ-MC500EZ	D
GZ-MC500AA	E
GZ-MC500AC	F
GZ-MC500AG	G
GZ-MC500AH	H




315
301
314
314
306
308
308
b
305
304
304A
b
310
307
307
307
309
a
309
309
320
303
318
313
a
302
319
316
317
317
355
353
356
357
c
354
354
359
351
358
359
352
c


501
501E
501D
501H
501H
501G
501B
501C
501C
501F
501F
501G
501A
508
507
503
CF BOARD
ASSEMBLY
<06>
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506
502
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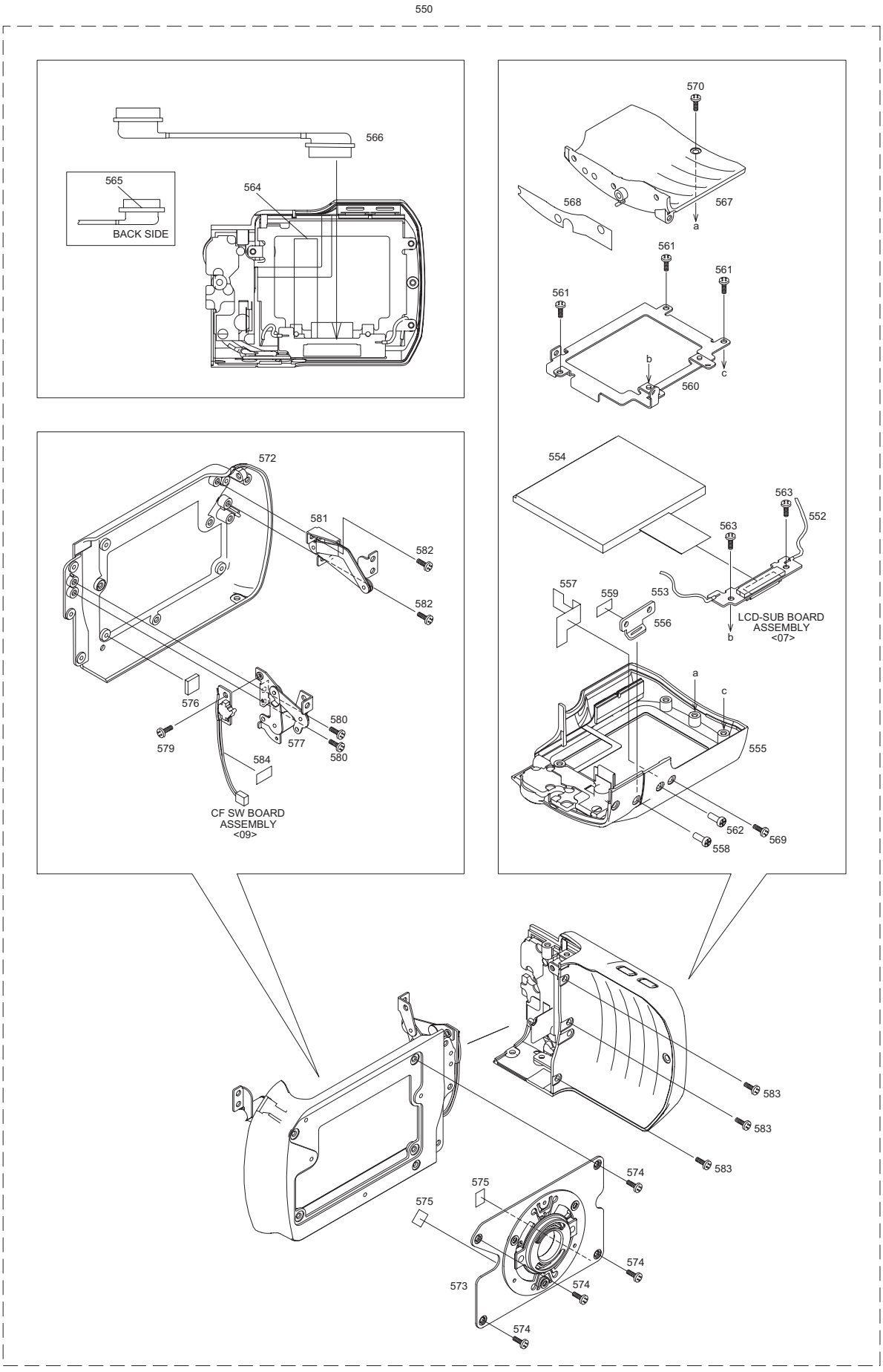
506
506
518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566
565
564
BACK SIDE
570
568
567
a
561
561
561
b
c
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582
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576
580
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577
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584
CF SW BOARD
ASSEMBLY
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563
557
559
553
556
LCD-SUB BOARD
ASSEMBLY
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b
a
c
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562
569
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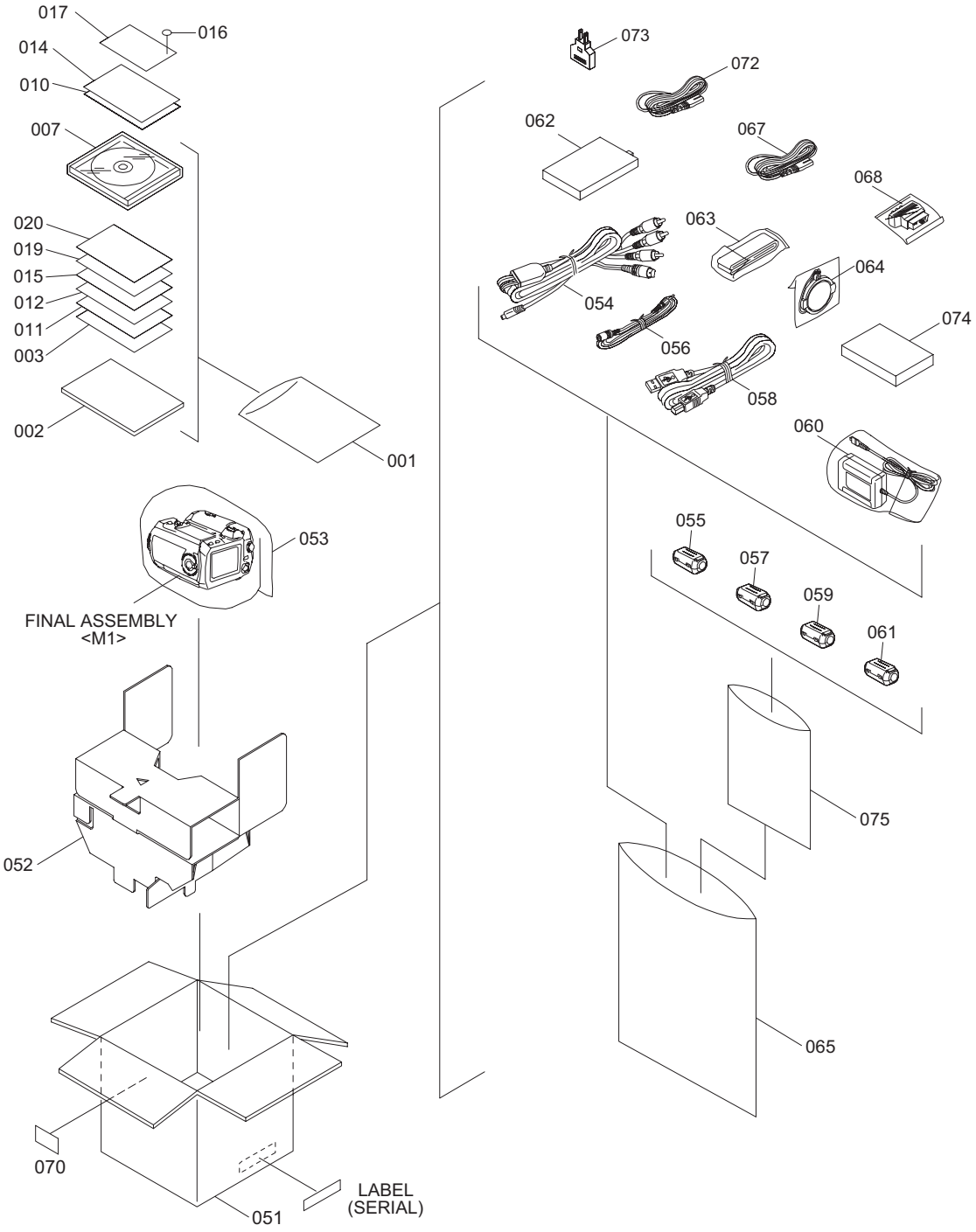
583
574
575
575
574
573
574
574

1.2 PACKING AND ACCESSORY ASSEMBLY <M5>



MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

2. PARTS LIST

FINAL ASSEMBLY <M1>

⚠ Symbol No.	Part No.	Part Name	Description	Local
101	LY34497-001A	PLATE(ROTALY)		
103	LY34444-001F	COVER(TOP)		
104	LY34528-002B	COVER(FR.)ASSY		
104A	LY34510-002A	COVER(DC)ASSY		
104B	LY44815-001B	SHAFT(BELT)		
105	LY30031-0J8A	SPECIAL SCREW	GR.B-B.F(A)	
106	LY30031-0K5A	SPECIAL SCREW	GR.B-B.F(A)	
107	LY30031-0J8A	SPECIAL SCREW	BF(B-GR.B)	
108	LY30031-0E6A	SPECIAL SCREW	GR.B-TRIP	
110	LY30031-0J8A	SPECIAL SCREW	PL(R)-GR.B(x3)	
112	QYSPSGT1740DA	TAP SCREW	REAR-GCO(L) M1.7 x 4mm(x2)	
113	LY30031-031A	SPECIAL SCREW	CO(T)-REAR	
114	LY30031-0H1A	SPECIAL SCREW	CO(T)-B.F(x2)	
116	LY30031-084A	SPECIAL SCREW	CO(T)-GR.B	
117	QYSPSGT1740DA	TAP SCREW	GR(L)-CO(F) M1.7 x 4mm	
118	LY30031-0E5A	SPECIAL SCREW	CO(F)-GR.B	
119	LY30031-007A	SPECIAL SCREW	ARM-GR.C(U)	
120	LY30031-007A	SPECIAL SCREW	STAY-GRC(U)	
121	LY30031-016A	SPECIAL SCREW	ARM-LO(CO)	
122	LY30031-016A	SPECIAL SCREW	STAY-LO(CO)	
123	LY30031-016A	SPECIAL SCREW	REG-B.F(x2)	
125	LY30031-031A	SPECIAL SCREW	GR(L)-CO(F)	
127	LY44928-001A	SPACER	BOTTOM	
128	LY30034-0M5A	SPACER(A)	REG 10P	
130	LY30031-0H1A	SPECIAL SCREW	COT-BKTL	
131	LY30031-0J8A	SPECIAL SCREW	ROTA-JOINT(x3)	
141	LY34400-002B	COVER(JIG)		
142	LY30031-0J8A	SPECIAL SCREW	COV(J)-LOW	
143	LY44875-001B	CAUTION LABEL		
144	LY34871-001C	HOOD ASSY		
144A	LY34873-001C	HOOD RING		
144B	LY34874-001B	BASE(HOOD)		
152	LY30032-023A	SPECIAL SCREW	ANA-OP.F(x2)	
154	LY30031-0D8A	SPECIAL SCREW	DIGI-OP.F	
155	LY34879-001B	COVER(POW)ASSY		
156	LY30031-0D8A	SPECIAL SCREW	C.P-OP.F	
157	LY30031-0D8A	SPECIAL SCREW	P.UNIT-OPF	
158	LY34882-001C	L.CASE(OP)ASSY		
158A	LY34917-001B	COVER(SD)		
158B	LY45035-001A	SHAFT		
158C	LY34395-001A	SPRING(SD)		
158D	LY30031-063A	SPECIAL SCREW		
159	LY30031-0D8A	SPECIAL SCREW	UP-LO(x2)	
160	LY30031-0D8A	SPECIAL SCREW	LO-JO.P.B	
161	LY30031-0D8A	SPECIAL SCREW	CO.P-PO.U	
162	LY30031-0D8A	SPECIAL SCREW	C.P-LO-OPF	
163	LY34883-001B	JOINT CASE ASSY		
163A	LY34884-001A	COVER(JOINT)		
163B	LY30031-0D8A	SPECIAL SCREW	J.CASE-COV	
164	LY30031-0H6A	SPECIAL SCREW	JO.C-UP	
165	LY30031-0D8A	SPECIAL SCREW	JO.C-OP.F	
166	LY30031-0K5A	SPECIAL SCREW	JO.C-OP.F	
167	LY30031-0D8A	SPECIAL SCREW	CO.J-LO	
172	LY30034-0T3A	SPACER(A)	JOINT CASE	
201	LY34905-001A	OP BLOCK ASSY		B
201	LY34905-001B	OP BLOCK ASSY		A,C,D,E,F,G,H
201A	PTY34905-006	AUTO IRIS UNIT		
201B	PTY34905-001	ZOOM MOTOR UNIT		
201C	PTY34905-002	FOCUS MOTOR UNIT		
201D	PTY34905-535	SCREW	M1.4 x 3.5(x5)	
201E	PTY34905-530	SCREW	M1.2 x 3.0(x2)	
202	LY45030-001A	PRISM ASSY		B
202	LY45030-002A	PRISM ASSY		A,C,D,E,F,G,H
203	QYSPSGU1750ZA	TAP SCREW	M1.7 x 5mm(x3)	
214	LY34952-001B	HEAT SINK(CCD)		
216	LY34956-001A	HEAT SHEET	(x3)	
220	LY34867-001B	OP FRAME ASSY		B,E,G,H
220	LY34867-001C	OP FRAME ASSY		A,C,D,F
220A	LY44814-001A	BUSH	(x3)	
221	LY30032-022A	SPECIAL SCREW	BUSH-OP(x3)	
222	QAL0703-001	FPC		
223	CNA1312K	IC(PHOTO SENSOR)	(x2)	
224	LY34875-001D	FOCUS RING ASSY		B
224	LY34875-001E	FOCUS RING ASSY		A,C,D,E,F,G,H
224A	LY21390-001B	HOOD FIXER		
224B	LY34877-001A	SLIT RING		
224C	LY21391-001D	BASE(FOCUS)		
224D	LY34878-001A	EARTH PLATE		B
224D	LY34878-001B	EARTH PLATE		A,C,D,E,F,G,H
224E	LY30031-023A	SPECIAL SCREW	FOCUS R AY(x3)	
225	LY30031-023A	SPECIAL SCREW	FO.R-PHOTO	
226	LY30031-0E5A	SPECIAL SCREW	OP.F-FO.R(x2)	
227	LY34895-001A	JOINT PLATE B		
228	LY30031-0D8A	SPECIAL SCREW	OP-F.J.PLT	
230	LY30031-0D8A	SPECIAL SCREW	CDS-OP.F(x2)	
231	LY34189-014A	GASCKET		
233	LY30031-007A	SPECIAL SCREW	H.SINK(x2)	
249	LY30034-0W9A	SPACER(A)	FPC	
251	LY34910-002D	U.CASE(OP)ASSY		
251A	LY34863-001A	PLATE(3CCD)		
252	LY34862-001A	JOINT PLATE		
253	LY30031-0J8A	SPECIAL SCREW	JO.P-UP	
254	LY34598-002A	MIC		
255	LY34861-001A	COVER(MIC)		
256	LY30031-0D8A	SPECIAL SCREW	C.MIC(x2)	
257	QAS0171-001	SPEAKER		
258	LY45019-001A	PLATE(SPK)		
259	LY30031-0D8A	SPECIAL SCREW	PLT.SPK(x2)	
⚠ 261	LY21394-001B	STROBE UNIT		
262	LY30031-0D8A	SPECIAL SCREW	STROBE(x5)	
263	LY30034-0V9A	SPACER(A)		
266	LY21388-001B	POWER UNIT		
269	LY30031-0D8A	SPECIAL SCREW	POW.U-UP(x4)	
271	LY30034-0J6A	SPACER(A)	SPK	
301	LY10539-002A	GRIP COVER(U)		
⚠ 302	LY34526-002A	GRIP COV(L)ASSY		B
⚠ 302	LY34526-002B	GRIP COV(L)ASSY		A,C,D,E,F,G,H
303	LY34438-001A	SHAFT(HINGE)		
304	LY34501-002A	LOCK(COVER)ASSY		
304A	LY30001-034A	TENSION SPRING		
305	LY34507-001B	KNOB(LOCK)		
306	LY21281-002A	ZOOM UNIT		
307	LY30031-007A	SPECIAL SCREW	LO(CO)-ZO(x3)	
308	LY30031-0H1A	SPECIAL SCREW	GC(U)-LO(C)(x2)	
309	LY30031-031A	SPECIAL SCREW	BATC-GC(L)(x3)	
310	LY30034-0N1A	SPACER(A)	ZOOM FPC	
313	LY30034-0G2A	SPACER(A)	BAT CASE	
314	LY34499-001B	BUFFER(2)	ALS-06B(x2)	
315	LY44922-001C	LABEL(BATT)		
316	LY34402-001C	TRIPOD		
317	LY30031-0E6A	SPECIAL SCREW	GR.C(L-TRI)(x2)	
318	LY44957-001A	SHIELD(B.CASE)		
319	LY30034-0M9A	SPACER(A)	ZOOM FPC	
320	LY30034-0X4A	SPACER(A)		A,C,D,E,F,G,H
351	LY34387-001A	BATT.TERM UNIT		
352	WJM0436-002A-E	E-SI C WIRE C-F	BATT.TERM	
353	LY34441-001A	KNOB(RELEASE)		
354	LY30031-0A2A	SPECIAL SCREW	BATT-BATC(x2)	
355	LY30031-0H1A	SPECIAL SCREW	KNO(R-BATC)	
356	LY21301-001C	BATT.CASE		
357	LY30034-0E2A	SPACER(A)		
358	LY30034-066A	SPACER(A)	BATT.CASE	
359	LY30017-046A	SPACER-B	BATT.CASE(x2)	
501	LY21289-001G	SUSPENSION ASSY		
501A	LY34420-001A	GUIDE SHAFT(L)		
501B	LY34421-001A	GUIDE SHAFT(S)		
501C	LY21290-001A	ARM	(x2)	
501D	LY34422-001B	CATCH		
501E	LY34422-002B	CATCH		
501F	LY30031-0B2A	SPECIAL SCREW	(x2)	
501G	LY30002-046B	COMPRESSION SPRING	(x2)	
501H	LY30031-056A	SPECIAL SCREW	CATCH-ARM(x2)	
502	LY21296-001B	BASE FRAME(A)		
503	LY21297-001A	BASE FRAME(B)		
504	LY34498-001A	BUFFER(1)	YMG-80BK(x4)	
505	LY34499-001B	BUFFER(2)	YMG-80BK(x6)	
506	LY34499-002A	BUFFER(2)	YMG-80BK(x4)	
507	LY30031-016A	SPECIAL SCREW	B.PL-B.FRM	
508	LY30031-016A	SPECIAL SCREW	B.F(B)-B.P	
509	LY30031-016A	SPECIAL SCREW	B.F(A)-B.F	
510	LY30031-016A	SPECIAL SCREW	M.PWB-B.F	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
517	LY30034-0N9A	SPACER(A)	FRAME(A)	
518	LY30034-0W2A	SPACER(A)	FRAME(A)	
550	LYH20898-002A	MONITOR ASSY		
552	WJV0097-002A-E	E-PRIMARY WIRE	B.LIGHT(-)	
553	WJV0098-002A-E	E-PRIMARY WIRE	B.LIGHT(+)	
554	QLD0347-002	LCD MODULE		
555	LY21282-004A	REAR UNIT		
556	LY34529-001A	HOOK		
557	LY34678-001A	SHIELD(REAR)		
558	LY30031-0F7A	SPECIAL SCREW	REAR-HOOK	
559	LY30034-0M9A	SPACER(A)	HOOK	
560	LY21299-001A	BRACKET(LCD)		
561	LY30031-086A	SPECIAL SCREW	BR(LCD)-RE(x3)	
562	LY30031-0D8A	SPECIAL SCREW	RE-BR(LCD)	
563	LY30031-0D8A	SPECIAL SCREW	M.J-BR(LCD)(x2)	
564	LY30034-0E8A	SPACER(A)	BKT	
565	LY30034-0K4A	SPACER(A)	WJJ0499	
566	WJJ0591-001A-E	E-SI C WIRE C-C	M.JUN-REG	
567	LY34680-002A	COVER(MONI)ASSY		
568	LY34677-001A	SHIELD(MONI)		
569	LY30031-086A	SPECIAL SCREW	RE-CO(MON)	
570	LY30031-086A	SPECIAL SCREW	CO(MON)-RE	
572	LY10537-002B	GRIP BASE		B
572	LY10537-002D	GRIP BASE		A,C,D,E,F,G,H
573	LY21288-002B	ROTALY UNIT	ROTAL UNIT	B,E,G,H
573	LY21288-002C	ROTALY UNIT	ROTAL UNIT	A,C,D,F
574	LY30031-0F7A	SPECIAL SCREW	ROT-GR.B(x4)	
575	LY30034-0R5A	SPACER(A)	ROTALY(x2)	
576	LY30034-0G1A	SPACER(A)	GRIP BASE	
577	LY34432-001B	STAY(COVER)ASSY		
579	LY30031-0F7A	SPECIAL SCREW	SW-STAY	
580	LY30031-0D8A	SPECIAL SCREW	STAY-GR.B(x2)	
581	LY34426-001A	ARM(COVER)ASSY		
582	LY30031-0D8A	SPECIAL SCREW	ARM-GR.B(x2)	
583	LY30031-0D8A	SPECIAL SCREW	CO(M)-GR.B(x3)	
584	LY30034-0E9A	SPACER(A)	SW WIRE	

PACKING AND ACCESSORY ASSEMBLY <M5>

⚠ Symbol No.	Part No.	Part Name	Description	Local
001	LY34452-001A	POLY BAG	DOCUMENT	
⚠ 002	LYT1424-001A	INST BOOK(EN)	(ENGLISH)	A
⚠ 002	LYT1424-002A	INST BOOK(GE)	(GERMAN)	B,C
⚠ 002	LYT1424-003A	INST BOOK(FR)	(FRENCH)	B
⚠ 002	LYT1424-004A	INST BOOK(DU)	(DUTCH)	B
⚠ 002	LYT1424-005A	INST BOOK(SP)	(SPANISH)	B
⚠ 002	LYT1424-006A	INST BOOK(IT)	(ITALIAN)	B
⚠ 002	LYT1424-007A	INST BOOK(DA)	(DANISH)	C
⚠ 002	LYT1424-008A	INST BOOK(FI)	(FINN)	C
⚠ 002	LYT1424-009A	INST BOOK(SW)	(SWEDISH)	C
⚠ 002	LYT1424-010A	INST BOOK(NO)	(NORWEGIAN)	C
⚠ 002	LYT1424-011A	INST BOOK(RU)	(RUSSIAN)	D
⚠ 002	LYT1424-012A	INST BOOK(CZ)	(CZECH)	D
⚠ 002	LYT1424-013A	INST BOOK(PO)	(POLISH)	D
⚠ 002	LYT1424-014A	INST BOOK(HU)	(HUNGARIAN)	D
⚠ 002	LYT1424-015A	INST BOOK(PT)	(PORTUGUESE)	B
⚠ 002	LYT1432-001A	INST BOOK(EN)	(ENGLISH)	E,G,H
⚠ 002	LYT1432-002A	INST BOOK(CH.S)	(CHINESE)	F,G,H
⚠ 002	LYT1432-004A	INST BOOK(AR)	(ARABIC)	G
003	LYT1466-001A	INST BOOK(SOFT.EN)	(SOFT.ENGLISH)	A
003	LYT1466-002A	INST BOOK(SOFT.GE)	(SOFT.GERMAN)	B,C
003	LYT1466-003A	INST BOOK(SOFT.FR)	(SOFT.FRENCH)	B
003	LYT1466-004A	INST BOOK(SOFT.DU)	(SOFT.DUTCH)	B
003	LYT1466-005A	INST BOOK(SOFT.SP)	(SOFT.SPANISH)	B
003	LYT1466-006A	INST BOOK(SOFT.IT)	(SOFT.ITALIAN)	B
003	LYT1466-007A	INST BOOK(SOFT.DA)	(SOFT.DANISH)	C
003	LYT1466-008A	INST BOOK(SOFT.FI)	(SOFT.FINN)	C
003	LYT1466-009A	INST BOOK(SOFT.SW)	(SOFT.SWEDISH)	C
003	LYT1466-010A	INST BOOK(SOFT.NO)	(SOFT.NORWEGIAN)	C
003	LYT1466-011A	INST BOOK(SOFT.RU)	(SOFT.RUSSIAN)	D
003	LYT1466-012A	INST BOOK(SOFT.CZ)	(SOFT.CZECH)	D
003	LYT1466-013A	INST BOOK(SOFT.PO)	(SOFT.POLISH)	D
003	LYT1466-014A	INST BOOK(SOFT.HU)	(SOFT.HUNGARIAN)	D
003	LYT1466-018A	INST BOOK(SOFT.PT)	(SOFT.PORTUGUESE)	B
003	LYT1425-001A	INST BOOK(SOFT.EN)	(SOFT.ENGLISH)	E,G,H
003	LYT1425-015A	INST BOOK(SOFT.CH.S)	(SOFT.CHINESE)	F,G,H
003	LYT1425-016A	INST BOOK(SOFT.AR)	(SOFT.ARABIC)	G
007	LY32210-0B6A	CD ROM ASSY		
010	----------	WARRANTY CARD	BT-54026-1	B
010	----------	WARRANTY CARD	BT-54027-1	A,C,D
011	LYT0194-001B	Q.CARD		A
012	YU30878	REGI. CARD		A
014	----------	WARRANTY CARD	BT-56012-1	E
015	BT-59021-4	SVC CENTER LIST		F
016	BT-59020-1	SEAL		F
017	----------	WARRANTY CARD	BT-59019-1	F
019	LYT1423-004A	SHEET(ATT.HDD)		
020	LYT1424-016A	SHEET(GE/FR)		B,C
020	LYT1424-017A	SHEET(DU/IT)		B
020	LYT1424-018A	SHEET(SP/PT)		B
020	LYT1424-019A	SHEET(DA/NO)		C
020	LYT1424-020A	SHEET(SW/FI)		C
020	LYT1424-021A	SHEET(RU/PO)		D
020	LYT1424-022A	SHEET(CZ/HU)		D
020	LYT1424-023A	SHEET(EN)		A
020	LYT1423-005A	SHEET(EN)		E
020	LYT1432-005A	SHEET(EN/CH)		F,G,H
020	LYT1432-006A	SHEET(KO/AR)		G
051	LY34912-004B	PACKING CASE		A,B,C,D,E,G
051	LY34912-005B	PACKING CASE		F,H
052	LY34914-001B	CUSHION(1)		B
052	LY34914-001C	CUSHION(1)		A,B,C,D,E,G
053	LY30023-043A	POLY BAG		
054	QAM0663-001	MULTI CABLE	MULTI	
055	QQR0919-004	CORE FILTER	MULTI 1T	
056	QAM0661-001	AUDIO CABLE	HP 2.5-3.5	
057	QQR0917-004	CORE FILTER	HP 1T	
058	QAM0538-001	USB CABLE	USB	
059	QQR0491-004	CORE FILTER	USB 1T	
⚠ 060	LY21104-001D	AC ADAPTER	AP-V14E	A
⚠ 060	LY21104-001C	AC ADAPTER	AP-V14E	E,H
⚠ 060	LY21104-003D	AC ADAPTER	AP-V14AC	F
⚠ 060	LY21343-001A	AC ADAPTER	AP-V17E	C,D,G
⚠ 060	LY21343-001B	AC ADAPTER	AP-V17E	B
061	QQR0917-004	CORE FILTER	DC 1T	
⚠ 062	LY34416-001B	BATTERY PACK	BN-VM200U	
063	LY21399-001A	STRAP(DOUBLE)		
064	LY34918-001B	HOOD CAP ASSY		
065	QPA02003005P	POLY BAG	ACC	
⚠ 067	QMPH040-190-JR	POWER CORD(EK)	AS/NZS	E
⚠ 067	QMPP210-190-JR	POWER CORD(EK)	BS PLUG 1.9m BLACK	A
⚠ 067	QMPS260-190-JR	POWER CORD(EK)	CCC PLUG	F
068	QAM0302-001	ADAPTOR PLUG	PERI-RCAS	A,B,C,D
070	LY40302-002A	LABEL		
⚠ 072	QMPL270-190-JR	POWER CORD(EU)	CEE PLUG	H
⚠ 073	QAM0001-001	CONVERSION PLUG	FIX AC CO.	H
074	QAL0721-001	HDD	MD4GB(HITACHI)	
074	or QAL0665-001	HDD	MD4GB(HITACHI)	
074	or QAL0663-001	HDD	MD4GB(JVC)	
075	LY30023-014A	POLY BAG	CORE FILTE	

DIGITAL BOARD ASSEMBLY <01>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10039-03B	DIGITAL BOARD ASSY		B
PW1	LYA10039-03C	DIGITAL BOARD ASSY		A,C,D
PW1	LYA10039-05C	DIGITAL BOARD ASSY		E,F,H
PW1	LYA10039-06C	DIGITAL BOARD ASSY		G
IC3001	UPD61152F1-A03	IC(MICRO C ROM)	MPEG2 CDEC	
IC3301	K4S283233F-HN75	IC	128 32BIT	
IC4001	SIP1280ISD-DVA2	IC	SIP1280A2	
IC4001	or SIP1280-DV	IC	SIP1280	
IC4002	SN74AHC1G04DC-X	IC	SN74AHC04	
IC4003	MM1613DN-X	IC	3.3V REG	
IC4301	SP32J55BFI12B02	IC(MICRO C ROM)	4M FLASH	B
IC4301	SP32J55BFI12B07	IC(MICRO C ROM)	4M FLASH	A,C,D
IC4301	SP32J55BFI12B08	IC(MICRO C ROM)	4M FLASH	E,F,G,H
IC4302	K4S563233F-HN75	IC	256M FBGA	
IC4501	JCY0216	IC	PRE PROCES	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC4502	K4S643233H-HN75	IC	64M *32BIT	
IC4504	25LC640X-I/STGX	IC	EEPROM	
Q201	DTC144EM-X	DIGI TRANSISTOR		
Q4001	2SC5658/QRS/-X	TRANSISTOR		
D4003	1SS376-X	SI DIODE		
C221	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C401	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C402	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C602	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3005	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3006	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3007	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3008	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3009	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3010	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3011	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3012	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3013	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3014	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3015	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3016	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3017	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3311	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C3312	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3316	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3318	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3321	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3322	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4001	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C4002	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C4005	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C4006	NBE90GM-226X	TA E CAPACITOR	22uF 4V M	
C4008	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4009	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4010	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4011	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4014	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4015	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4016	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4017	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4018	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4019	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4020	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4021	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4027	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4028	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4029	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4030	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4031	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4032	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4033	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4034	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4035	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4036	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4040	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4041	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4042	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4043	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4045	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4301	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C4302	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4314	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4318	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4321	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4323	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4325	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4326	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4503	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4504	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4505	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4506	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4507	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4508	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4516	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4520	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C4521	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4523	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4524	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4525	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4526	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4527	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4528	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4529	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4530	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
C4531	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4532	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4533	NCBA0JK-224W	C CAPACITOR	0.22uF 6.3V K	
C4534	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4539	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4540	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4554	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4555	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4556	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4560	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4561	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4562	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4568	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4569	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4575	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4580	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4581	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C4587	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
R201	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R204	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R401	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R402	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R403	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R404	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R405	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R406	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R407	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R408	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R409	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R412	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R413	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R644	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R645	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R646	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R647	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R648	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R649	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R650	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R653	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R654	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R656	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R702	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R703	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R704	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3001	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3002	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3003	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3004	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3008	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3009	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3010	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3011	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3012	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3013	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3014	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3015	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3018	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3019	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3020	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3021	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3024	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3025	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3026	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3027	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3028	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3029	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3030	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3031	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
R3032	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3033	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3034	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3035	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3036	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R3037	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3038	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3039	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3040	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3043	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3048	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3049	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3050	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3051	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3052	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3053	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3054	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3055	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3056	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3057	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3060	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3061	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3062	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3063	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3301	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4001	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4003	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4005	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R4006	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4007	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4009	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4010	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4011	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4012	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4013	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4014	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4015	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4016	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4017	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4018	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4019	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4020	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4021	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4022	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4024	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4025	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4031	NRSA6AD-272W	MG RESISTOR	2.7kΩ 1/16W D	
R4032	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4033	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4034	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4035	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4036	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4040	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4041	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4042	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4044	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4045	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4046	NRSA6AJ-221W	MG RESISTOR	220Ω 1/16W J	
R4050	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4051	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4053	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R4054	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R4055	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4056	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4057	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4058	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4061	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4062	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4063	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4065	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4066	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4068	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4069	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4070	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R4071	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R4081	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4101	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4102	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4103	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4104	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4105	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4106	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4107	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4110	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4111	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4112	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4113	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4114	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4115	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4116	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4117	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4118	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4119	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4120	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4121	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4122	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4123	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4124	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4125	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4126	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4127	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4128	NRSA6AJ-330W	MG RESISTOR	33Ω 1/16W J	
R4306	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4531	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4532	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4533	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4534	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4535	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4536	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4537	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4538	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4540	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4541	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4542	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4543	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4544	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R4545	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4551	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4552	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4553	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4554	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R4555	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4556	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4557	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4558	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4559	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4560	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4561	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4565	NRSA6AJ-331W	MG RESISTOR	330Ω 1/16W J	
R4566	NRSA6AJ-331W	MG RESISTOR	330Ω 1/16W J	
R4567	NRSA6AJ-331W	MG RESISTOR	330Ω 1/16W J	
R4568	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4569	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4570	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4571	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4572	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4573	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4574	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4575	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4576	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R4577	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R4578	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4579	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4580	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4581	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4582	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4587	NRSA6AJ-474W	MG RESISTOR	470kΩ 1/16W J	
R4588	NRSA6AJ-393W	MG RESISTOR	39kΩ 1/16W J	
R4589	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4590	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R4591	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4592	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4593	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4594	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4595	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4600	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
R4601	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4633	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4652	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R4677	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4682	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4695	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4696	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4697	NRSA6AJ-560W	MG RESISTOR	56Ω 1/16W J	
R4698	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4712	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4713	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4714	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4717	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4719	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4720	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4721	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4722	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4723	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4724	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R4725	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4726	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R4727	NRSA6AJ-470W	MG RESISTOR	47Ω 1/16W J	
R9801	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
RA4001	NRZ0034-221W	NET RESISTOR	220Ω 1/32W J	
RA4002	NRZ0034-221W	NET RESISTOR	220Ω 1/32W J	
RA4011	NRZ0034-330W	NET RESISTOR	33Ω 1/32W J	
RA4012	NRZ0034-330W	NET RESISTOR	33Ω 1/32W J	
RA4013	NRZ0034-330W	NET RESISTOR	33Ω 1/32W J	
RA4301	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	
RA4302	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	
RA4303	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	
RA4304	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	
L201	NQR0506-002X	EMI FILTER		
L221	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
L401	NQR0129-002X	FERRITE BEADS		
L3001	NQR0129-002X	FERRITE BEADS		
L3002	NQR0129-002X	FERRITE BEADS		
L3003	NQR0129-002X	FERRITE BEADS		
L3004	NQR0129-002X	FERRITE BEADS		
L3005	NQR0006-001X	FERRITE BEADS		
L3301	NQR0006-001X	FERRITE BEADS		
L4001	NQR0129-002X	FERRITE BEADS		
L4002	NQR0129-002X	FERRITE BEADS		
L4005	NQR0006-001X	FERRITE BEADS		
L4006	NQR0154-003X	FERRITE CORE		
L4007	NQR0006-001X	FERRITE BEADS		
L4010	NQR0006-001X	FERRITE BEADS		
L4301	NQR0129-002X	FERRITE BEADS		
L4303	NQR0129-002X	FERRITE BEADS		
L4501	NQR0154-003X	FERRITE CORE		
L4502	NQR0129-002X	FERRITE BEADS		
L4503	NQL38DK-100X	P COIL	10uH K	
L4504	NQL38DK-100X	P COIL	10uH K	
L4505	NQR0129-002X	FERRITE BEADS		
L4506	NQR0129-002X	FERRITE BEADS		
L4508	NQL38DK-100X	P COIL	10uH K	
L4509	NQL38DK-100X	P COIL	10uH K	
CN101	QGF0309F1-51X	CONNECTOR	CCD FFC/FPC (1-51)	
CN102	QGB0402K3-B0X	CONNECTOR	ANA PWB B-B (1-110)	
CN103	QGA1002F1-07X	CONNECTOR	REG PWB W-B (1-7)	
CN105	QGB0512L1-30X	CONNECTOR	JIG CN B-B (1-30)	
CN106	NNZ0134-001X	SD CARD CONNE	SD SLOTJST	
CN9801	QGA0401F1-25W	CONNECTOR	25IPEX RED W-B (1-25)	
CN9802	QGA0401F1-25W	CONNECTOR	25IPEX GRN W-B (1-25)	
J101	QNZ0497-001	USB(B) CONNECTOR	USB USB(MINI-B)	
X4001	NAX0710-001X	CXO		
OT1	LY30034-0R4A	SPACER(A)	25PIPEX	
WR1	WJN0164-001A-E	E-SH C WIRE C-C	DIG-CF	
WR2	WJN0165-001A-E	E-SH C WIRE C-C	DIG-CF	

ANALOG BOARD ASSEMBLY <02>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10040-03B1	ANALOG BOARD ASSY		B
PW1	LYA10040-03C1	ANALOG BOARD ASSY		A,C,D,E,F,G,H
IC171	XC6202P33M-X	IC	LIT 3.3V	
IC181	MM1614GN-X	IC	IRIS ND	
IC1001	MN101C67DJC	IC(MICRO C ROM)	CAM CPU	
IC1001 or	MN101CF67GJC	IC(MICRO C ROM)		
IC1002	RS5C314-X	IC		
IC1005	BU3095-0JFV-X	IC	OSD IC	
IC1008	S-80828CNNB-G-W	IC		
IC2001	WM9707-W	IC	WM9707	
IC2002	BU2360FV-X	IC		
IC2201	AK4564VQ	IC		
IC2202	TC7W66FK-X	IC		
IC3201	JCP8075	IC		
IC3203	MM3142FN-X	IC	2.5V	
IC3204	MM3141JN-X	IC	1.8V	
IC4701	NJM2143R-X	IC		
IC4702	NJM2143R-X	IC		
IC4703	NJM2143R-X	IC		
IC4704	NJM3414AV-X	IC		
IC4801	LY34853-001A	CSP IC ASSY	(SERVICE)	
IC4951	AN41902A	IC		
IC5801	TC75S54FU-X	IC		
IC5802	SN74AHC1G66K-X	IC		
IC5852	NAL0031-002X	GYRO SENSOR	SA NEC	A,C,D,E,F,G,H
IC5852	NAL0032-002X	GYRO SENSOR	SA NEC	B
IC7601	LV4149W-MPB-E	IC	MONITOR	
IC7602	NJM2871BF29-X	IC	2.9V	
Q101	RPM-22PB	PHOTO TRANSISTOR	IR	
Q181	RTF020P02-X	MOS FET		
Q182	2SC4617/QR/-X	TRANSISTOR		
Q191	DTC144EM-X	DIGI TRANSISTOR	MF LED DRV	
Q1001	DTC124EE-X	DIGI TRANSISTOR		
Q1002	2SC4617/QR/-X	TRANSISTOR		
Q2002	2SA1774/QR/-X	TRANSISTOR		
Q2201	DTC144EM-X	DIGI TRANSISTOR		
Q2401	2SC5658/QRS/-X	TRANSISTOR		
Q2403	2SC4617/QR/-X	TRANSISTOR		
Q2403 or	BC847BT-X	TRANSISTOR		
Q2701	EMX18-W	TRANSISTOR		
Q2702	EMX18-W	TRANSISTOR		
Q3201	EMT1-W	PAIR TRANSISTOR		
Q3202	2SA1774/QR/-X	TRANSISTOR		
Q3203	EMT1-W	PAIR TRANSISTOR		
Q4701	2SC4655J/BC/-X	TRANSISTOR		
Q4951	DTC114EM-X	DIGI TRANSISTOR		
Q7501	UMD3N-W	DIGI TRANSISTOR		
Q7502	EMX1-W	TRANSISTOR		
D181	1SS355-X	SI DIODE		
D1001	DA221-X	DIODE ARRAY		
⚠ D6801	RB706D-40-X	SB DIODE		
⚠ D6802	RB715F-X	SB DIODE		
C101	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C171	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C172	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C181	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C182	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C183	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C184	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C1004	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1005	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C1006	NDCA1HJ-200W	C CAPACITOR	20pF 50V J	
C1008	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1013	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1014	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1015	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1017	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1018	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1019	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C1022	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1025	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C1031	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
C1038	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C2001	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2002	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2003	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2004	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2005	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2006	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2007	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2008	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2009	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2010	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2011	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2012	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2013	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2014	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2015	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2016	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2019	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2020	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2021	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2022	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2023	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2024	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C2025	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2026	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2027	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2029	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2030	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C2031	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C2033	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2034	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2201	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2202	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2203	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2204	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2205	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2206	NBE20GM-476X	TA E CAPACITOR	47uF 4V M	
C2207	NBE20GM-476X	TA E CAPACITOR	47uF 4V M	
C2209	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2210	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2211	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2212	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2213	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2214	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2215	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2216	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2217	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2218	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2223	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2224	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2401	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2402	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2403	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2404	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2405	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2406	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C2603	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C2604	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C2605	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C2606	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C2607	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C2608	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C2611	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C2612	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C2613	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C2614	NDCA1HJ-101W	C CAPACITOR	100pF 50V J	
C2615	NDCA1HJ-101W	C CAPACITOR	100pF 50V J	
C2616	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C2617	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C2618	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2619	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C2621	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C2622	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C3201	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3202	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3206	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3207	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3208	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C3209	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3210	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3211	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3213	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3214	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3215	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3216	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3217	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3218	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3219	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3220	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3221	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3222	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3223	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3224	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3225	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3226	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3227	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3230	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3233	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3234	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3236	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3240	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3242	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3244	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4701	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4702	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4703	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4704	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4705	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4707	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4708	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4709	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4710	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4711	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4712	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C4801	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4802	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4803	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4804	NBE21AM-106X	TA E CAPACITOR	10uF 10V M	
C4805	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4806	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4807	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4808	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4809	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4812	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4813	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4814	NDCA1HJ-680W	C CAPACITOR	68pF 50V J	
C4815	NDCA1HJ-121W	C CAPACITOR	120pF 50V J	
C4816	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4817	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4818	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4819	NCFA1AZ-104W	C CAPACITOR	0.1uF 10V Z	
C4820	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C4821	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C4952	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4954	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4956	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C4957	NDCA1HJ-220W	C CAPACITOR	22pF 50V J	
C4958	NDCA1HJ-220W	C CAPACITOR	22pF 50V J	
C5801	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C5806	NCFA1HZ-103W	C CAPACITOR	0.01uF 50V Z	
C5807	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C5808	NDCA1HJ-151W	C CAPACITOR	150pF 50V J	
C5809	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C5810	NCBA1HK-331W	C CAPACITOR	330pF 50V K	
C5812	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5851	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C5853	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7501	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C7601	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C7602	NCBA1EK-682W	C CAPACITOR	6800pF 25V K	
C7603	NBE91CM-105X	TA E CAPACITOR	1uF 16V M	
C7604	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7605	NCB21CK-474X	C CAPACITOR	0.47uF 16V K	
C7606	NCB21CK-474X	C CAPACITOR	0.47uF 16V K	
C7607	NCB21CK-474X	C CAPACITOR	0.47uF 16V K	
C7608	NCB21CK-474X	C CAPACITOR	0.47uF 16V K	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
C7609	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C7610	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C7611	NBP21CM-106X	TA E CAPACITOR	10uF 16V M	
C7612	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C7613	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C7614	NBE91CM-105X	TA E CAPACITOR	1uF 16V M	
C7615	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7616	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7617	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C7618	NCBA1CK-223W	C CAPACITOR	0.022uF 16V K	
C7621	NBE91CM-105X	TA E CAPACITOR	1uF 16V M	
C7622	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
C7625	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C7626	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C9702	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C9703	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C9704	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C9705	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C9706	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
R101	NRSA6AJ-302W	MG RESISTOR	3kΩ 1/16W J	
R121	NRSA6AJ-153W	MG RESISTOR	15kΩ 1/16W J	
R122	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R123	NRSA6AJ-273W	MG RESISTOR	27kΩ 1/16W J	
R124	NRSA6AJ-393W	MG RESISTOR	39kΩ 1/16W J	
R125	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R126	NRSA6AJ-124W	MG RESISTOR	120kΩ 1/16W J	
R127	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R128	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R151	NAD0037-473X	N THERMISTOR	47kΩ	
R161	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R171	NRSA6AD-154W	MG RESISTOR	150kΩ 1/16W D	
R172	NRSA6AD-393W	MG RESISTOR	39kΩ 1/16W D	
R181	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R182	NRSA6AJ-185W	MG RESISTOR	1.8MΩ 1/16W J	
R183	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R184	NRSA6AJ-303W	MG RESISTOR	30kΩ 1/16W J	
R185	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R197	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R1001	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1002	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1003	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1004	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1006	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1007	NRSA6AJ-243W	MG RESISTOR	24kΩ 1/16W J	
R1008	NRSA6AJ-243W	MG RESISTOR	24kΩ 1/16W J	
R1009	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R1010	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R1011	NRSA6AJ-471W	MG RESISTOR	470Ω 1/16W J	
R1016	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1017	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1018	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1020	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1021	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1022	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1023	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1024	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1025	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1027	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1028	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R1029	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R1030	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R1031	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1032	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1033	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1034	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1035	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1037	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1038	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R1039	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R1040	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R1041	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1042	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R1044	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1045	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1046	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1048	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1049	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1050	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R1051	NRSA6AJ-272W	MG RESISTOR	2.7kΩ 1/16W J	
R1052	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R1053	NRSA6AJ-154W	MG RESISTOR	150kΩ 1/16W J	
R1054	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R1055	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R1056	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R1057	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R1061	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R1062	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R1064	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R2001	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R2002	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R2003	NRSA6AJ-122W	MG RESISTOR	1.2kΩ 1/16W J	
R2004	NRSA6AJ-122W	MG RESISTOR	1.2kΩ 1/16W J	
R2018	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R2019	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R2021	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R2201	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R2202	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R2203	NRSA6AJ-393W	MG RESISTOR	39kΩ 1/16W J	
R2204	NRSA6AJ-154W	MG RESISTOR	150kΩ 1/16W J	
R2206	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R2207	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R2208	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2209	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2212	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω 1/16W J	
R2213	NRSA6AJ-2R7W	MG RESISTOR	2.7Ω 1/16W J	
R2217	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2218	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2222	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2223	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2224	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2231	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2401	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R2402	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R2403	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R2407	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R2601	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R2602	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R2607	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2608	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R2609	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R2610	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R2611	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2612	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2613	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2614	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2615	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R2616	NRSA6AJ-334W	MG RESISTOR	330kΩ 1/16W J	
R2701	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	
R2702	NRSA6AJ-821W	MG RESISTOR	820Ω 1/16W J	
R2703	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R2704	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R2705	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R2706	NRSA6AJ-221W	MG RESISTOR	220Ω 1/16W J	
R2707	NRSA6AJ-221W	MG RESISTOR	220Ω 1/16W J	
R2708	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2709	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2710	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R2712	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R3201	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R3202	NRSA6AD-183W	MG RESISTOR	18kΩ 1/16W D	
R3203	NRSA6AD-123W	MG RESISTOR	12kΩ 1/16W D	
R3204	NRSA6AD-821W	MG RESISTOR	820Ω 1/16W D	
R3205	NRSA6AD-821W	MG RESISTOR	820Ω 1/16W D	
R3207	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3213	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3214	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3215	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3216	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R3218	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R3221	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R3222	NRSA6AD-271W	MG RESISTOR	270Ω 1/16W D	
R3223	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R3224	NRSA6AD-301W	MG RESISTOR	300Ω 1/16W D	
R3225	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3226	NRSA6AD-131W	MG RESISTOR	130Ω 1/16W D	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
R3227	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3228	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R3229	NRSA6AD-131W	MG RESISTOR	130Ω 1/16W D	
R3230	NRSA6AD-131W	MG RESISTOR	130Ω 1/16W D	
R3231	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3232	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3233	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3234	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3235	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3236	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3237	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R3238	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R4701	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4702	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R4703	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R4704	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4705	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R4706	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R4707	NRSA6AJ-243W	MG RESISTOR	24kΩ 1/16W J	
R4708	NRSA6AJ-331W	MG RESISTOR	330Ω 1/16W J	
R4709	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4710	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R4712	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R4713	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R4714	NRSA6AJ-683W	MG RESISTOR	68kΩ 1/16W J	
R4715	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R4716	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R4717	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4718	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R4721	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4722	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R4723	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4724	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4801	NRSA6AJ-243W	MG RESISTOR	24kΩ 1/16W J	
R4802	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4803	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R4804	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4805	NRSA6AJ-153W	MG RESISTOR	15kΩ 1/16W J	
R4806	NRSA6AJ-684W	MG RESISTOR	680kΩ 1/16W J	
R4807	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R4808	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R4809	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R4810	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4811	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4812	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4816	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R4817	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4818	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4823	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R4824	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R4844	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4845	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R4953	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4954	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R4955	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R4956	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4957	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4959	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4960	NRSA6AJ-4R7W	MG RESISTOR	4.7Ω 1/16W J	
R4961	NRSA6AJ-271W	MG RESISTOR	270Ω 1/16W J	
R5805	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R5806	NRSA6AJ-474W	MG RESISTOR	470kΩ 1/16W J	
R5807	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R5808	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R5811	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R5812	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
⚠ R6816	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
⚠ R6817	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R7504	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R7506	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R7507	NRSA6AJ-240W	MG RESISTOR	24Ω 1/16W J	
R7601	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R7605	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R7606	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R7619	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R7622	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
RA1010	NRZ0034-104W	NET RESISTOR	100kΩ 1/32W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
L101	NQL38DK-100X	P COIL	10uH K	
L111	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
L1002	NQL402M-100X	COIL	10uH M	
L2001	NQR0006-001X	FERRITE BEADS		
L2002	NQL38DK-100X	P COIL	10uH K	
L2003	NQR0006-001X	FERRITE BEADS		
L2401	NQL402M-100X	COIL	10uH M	
L2402	NQL402M-100X	COIL	10uH M	
L3201	NQR0129-002X	FERRITE BEADS		
L3203	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
L3205	NQL932K-100X	COIL	10uH K	
L4953	NQR0129-002X	FERRITE BEADS		
L4954	NQL932K-100X	COIL	10uH K	
L4955	NQL932K-100X	COIL	10uH K	
L5801	NQR0129-002X	FERRITE BEADS		
L5851	NQR0129-002X	FERRITE BEADS		
L7602	NQL38DK-100X	P COIL	10uH K	
L7603	NQL38DK-100X	P COIL	10uH K	
L7604	NQR0129-002X	FERRITE BEADS		
L9701	NQR0129-002X	FERRITE BEADS		
⚠ BT6801	QAB0040-001	LITHIUM BATTERY		
CN201	QGA1001F1-04X	CONNECTOR	MIC W-B (1-4)	
CN202	QGA1001F1-02X	CONNECTOR	SPK W-B (1-2)	
CN203	QGB0402J3-B0X	CONNECTOR	DIGI PWB B-B (1-110)	
CN204	QGF0312F1-33W	CONNECTOR	OP DRV FFC/FPC (1-33)	
CN205	QGF0532F2-12X	CONNECTOR	STRB PWB FFC/FPC (1-12)	
CN206	QGA1002F1-10X	CONNECTOR	REG PWB-1 W-B (1-10)	
CN207	QGA0401F1-25W	CONNECTOR	REG IPEX25 W-B (1-25)	
CN208	QGA0503F1-30X	CONNECTOR	REG MXJ30 W-B (1-30)	
CN209	QGF0532F2-20X	CONNECTOR	OPE-1 FFC/FPC (1-20)	
CN211	QGF0543F1-06X	CONNECTOR	M.FOCUS FFC/FPC (1-6)	
CN212	QGA0803F1-02W	CONNECTOR	FAN W-B (1-2)	
⚠ F4951	NMFZ007-R25X-K	FUSE	0.25A 50V	
⚠ F4952	NMFZ007-R20X-K	FUSE	0.2A 50V	
S1001	NSW0258-001X	TACT SWITCH	RESET SW	
X1001	NAX0647-001X	C RESONATOR		
X1002	NAX0491-001X	CRYSTAL	32.768kHz	
OT1	LY30034-0J3A	SPACER(A)	WJJ0496	
OT2	LY45047-001A	SPACER	MXJ WIRE	
OT3	LY30034-0T2A	SPACER(A)		
OT4	LY30034-0T3A	SPACER(A)		
OT5	LY30030-0R4A	SPACER(A)	IC181	
OT6	LY30034-0W4A	SPACER(A)		
OT7	LY30034-0W3A	SPACER(A)		
OT8	LY30034-0W5A	SPACER(A)		
OT9	LY30034-0W3A	SPACER(A)		
WR1	WJN0166-003A-E	E-SH C WIRE C-C	REG25P	
WR2	WJJ0588-002A-E	E-SI C WIRE C-C	REG10P	
WR3	WJJ0589-002A-E	E-SI C WIRE C-C	REG30P	
WR4	QUBD73-X1A1A1	SIN TWIST WIRE	IC181	
WR5	QUBD76-04A1A1	SIN TWIST WIRE	IC181	
PW11	LYA20020-02A	REG SUB BOARD ASSY		
IC4851	TAR5S31-X	IC		
C4851	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C4852	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
J4851	QUBD71-05A1A1	SIN TWIST WIRE		
J4853	QUBD73-08A1A1	SIN TWIST WIRE		
J4854	QUBD71-08A1A1	SIN TWIST WIRE		

CDS BOARD ASSEMBLY <03>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW2	LYA10040-01B2	CDS BOARD ASSY		B
PW2	LYA10040-01C2	CDS BOARD ASSY		A,C,D,E,F,G,H
IC5001	JCY0217	IC	TG	
IC5002	HD49340HNP-X	IC	CDS R	
IC5003	HD49340HNP-X	IC	CDS G	
IC5004	HD49340HNP-X	IC	CDS B	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
IC5006	NAL0031-002X	GYRO SENSOR		B
IC5006	NAL0032-002X	GYRO SENSOR	SA NEC	A,C,D,E,F,G,H
IC5007	SN74AHC1G66K-X	IC		
IC5008	TC75S54FU-X	IC		
D5001	1SS355-X	SI DIODE		
D5002	1SS355-X	SI DIODE		
D5003	1SS355-X	SI DIODE		
C5001	NBE40GM-227X	TA E CAPACITOR	220uF 4V M	
C5002	NBE40GM-227X	TA E CAPACITOR	220uF 4V M	
C5003	NBE20GM-107X	TA E CAPACITOR	100uF 4V M	
C5005	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5008	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5009	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C5010	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5011	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5012	NBE21AM-106X	TA E CAPACITOR	10uF 10V M	
C5013	NBZ0018-106X	TA E CAPACITOR	10uF 20V M	
C5014	NBP21VM-105X	TA E CAPACITOR	1uF 35V M	
C5015	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5016	NBP21VM-105X	TA E CAPACITOR	1uF 35V M	
C5017	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5018	NBP21VM-105X	TA E CAPACITOR	1uF 35V M	
C5019	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5020	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C5021	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5022	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5023	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5024	NCBA1CK-123W	C CAPACITOR	0.012uF 16V K	
C5025	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5026	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5027	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5028	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5029	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5030	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5034	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5036	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5037	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5038	NCBA1CK-123W	C CAPACITOR	0.012uF 16V K	
C5039	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5040	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5041	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5042	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5043	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5044	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5048	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C5049	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5051	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5052	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5053	NCBA1CK-123W	C CAPACITOR	0.012uF 16V K	
C5054	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5055	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5056	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5057	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5058	NCB31CK-105X	C CAPACITOR	1uF 16V K	
C5059	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5063	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5064	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C5065	NBE90JM-106X	TA E CAPACITOR	10uF 6.3V M	
C5066	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5067	NCB21AK-225X	C CAPACITOR	2.2uF 10V K	
C5068	NCBA1HK-331W	C CAPACITOR	330pF 50V K	
C5069	NBE20JM-475X	TA E CAPACITOR	4.7uF 6.3V M	
C5070	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C5071	NDCA1HJ-151W	C CAPACITOR	150pF 50V J	
R5001	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5002	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5003	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5004	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5005	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5006	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5007	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5008	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5009	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5010	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R5011	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	

⚠ Symbol No.	Part No.	Part Name	Description	Local
R5012	NQR0559-002X	FERRITE BEADS		
R5013	NRSA6AJ-101W	MG RESISTOR	100Ω 1/16W J	
R5014	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R5015	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5016	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R5017	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R5018	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R5019	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R5020	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R5024	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R5025	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R5029	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R5030	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R5036	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R5037	NRSA6AJ-474W	MG RESISTOR	470kΩ 1/16W J	
R5038	NRSA6AJ-183W	MG RESISTOR	18kΩ 1/16W J	
R5039	NRSA6AJ-123W	MG RESISTOR	12kΩ 1/16W J	
R5040	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R5041	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R5042	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5043	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5044	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5045	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5046	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5047	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5048	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5049	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5050	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5051	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5052	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5053	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5054	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5055	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5056	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5057	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5058	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5059	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5060	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5061	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5062	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5063	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5064	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5065	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5066	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5067	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5068	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5069	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5070	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5071	NRSA6AJ-100W	MG RESISTOR	10Ω 1/16W J	
R5072	NQR0559-003X	FERRITE BEADS		
R5073	NQR0559-003X	FERRITE BEADS		
R5074	NQR0559-003X	FERRITE BEADS		
R5075	NQR0559-003X	FERRITE BEADS		
R5076	NQR0559-003X	FERRITE BEADS		
R5077	NQR0559-003X	FERRITE BEADS		
R5078	NQR0559-003X	FERRITE BEADS		
R5079	NQR0559-003X	FERRITE BEADS		
R5080	NQR0559-003X	FERRITE BEADS		
R5081	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
L5002	NQR0129-002X	FERRITE BEADS		
L5003	NQR0129-002X	FERRITE BEADS		
L5004	NQR0006-001X	FERRITE BEADS		
L5005	NQR0129-002X	FERRITE BEADS		
L5006	NQR0129-002X	FERRITE BEADS		
L5007	NQR0129-002X	FERRITE BEADS		
CN5001	QGB0507M1-40X	CONNECTOR	B-B (1-40)	
CN5002	QGF0309F1-51X	CONNECTOR	FFC/FPC (1-51)	
CN5003	QGA1002F1-04X	CONNECTOR	W-B (1-4)	
X5001	NAX0674-001X	CXO		
OT1	LY45091-001A	BUSTERAID		A,C,D,E,F,G,H
WR1	QAL0702-002	FPC	CDS-DIG	
WR2	WJJ0587-001A-E	E-SI C WIRE C-C	REG11P	A,B,C,D,E,G,H
WR2	WJJ0587-002A-E	E-SI C WIRE C-C	REG11P	F

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

REG BOARD ASSEMBLY <04>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10041-01C	REG BOARD ASSY		
IC3701	BH7612FV-X	IC		
IC6001	FA7725F	IC		
IC6002	LTC4412ES6-W	IC		
IC6003	S-89220ACNC-G-W	IC		
IC6051	S-80842CNNB-G-W	IC		
Q3701	EMZ1-W	PAIR TRANSISTOR		
Q6001	TPCS8101-X	MOS FET		
Q6002	DTC144EE-X	DIGI TRANSISTOR		
Q6004	TPCS8101-X	MOS FET		
Q6101	RSR025P03-X	MOS FET		
Q6102	RSR025N03-X	MOS FET	RSR025N03	
Q6201	RSR025P03-X	MOS FET		
Q6202	RSR025N03-X	MOS FET	RSR025N03	
Q6301	RSR025P03-X	MOS FET		
Q6302	RTF020P02-X	MOS FET	RTF020P02	
Q6303	2SC4617/QR/-X	TRANSISTOR		
Q6401	RSR025P03-X	MOS FET		
Q6402	RTF020P02-X	MOS FET		
Q6403	2SC4617/QR/-X	TRANSISTOR		
Q6404	RTF020P02-X	MOS FET		
Q6501	RSR025P03-X	MOS FET		
Q6502	2SD2703-X	TRANSISTOR		
Q6503	UMT1N-W	PAIR TRANSISTOR		
Q6503 or	HN1A01FU/G/-X	PAIR TRANSISTOR		
Q6503 or	BC856S-X	PAIR TRANSISTOR		
Q6504	HN1C01FU/G/-X	PAIR TRANSISTOR		
Q6505	2SA1577/QR/-X	TRANSISTOR		
Q6506	DTC144EE-X	DIGI TRANSISTOR		
Q6507	HN1C01FU/G/-X	PAIR TRANSISTOR		
Q6508	2SA1577/QR/-X	TRANSISTOR		
Q6701	RSQ035P03-W	MOS FET		
Q6702	RSQ035P03-W	MOS FET		
Q6703	RSR025P03-X	MOS FET		
D201	MA8068-X	Z DIODE		
D202	UDZS5.1B-X	Z DIODE		
D301	UDZS6.8B-X	Z DIODE		
D6101	RB160M-30-X	SB DIODE		
D6201	RB160M-30-X	SB DIODE		
D6301	RB160M-30-X	SB DIODE		
D6302	1SS355-X	SI DIODE		
D6401	1SS355-X	SI DIODE		
D6402	RB160M-30-X	SB DIODE		
D6501	RB481K-X	SB DIODE		
D6502	RB481K-X	SB DIODE		
D6701	RB160M-30-X	SB DIODE		
D6702	RB160M-30-X	SB DIODE		
D6801	RB551V-30-X	SB DIODE		
C201	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C202	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C203	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C204	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C205	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C206	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C207	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C208	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C209	NCB21CK-474X	C CAPACITOR	0.47uF 16V K	
C301	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C302	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C303	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C304	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C305	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C3701	NBZ0015-106X	TA E CAPACITOR	10uF 6.3V M	
C3702	NBE20GM-107X	TA E CAPACITOR	100uF 4V M	
C3703	NBE20GM-226X	TA E CAPACITOR	22uF 4V M	
C3704	NBE20GM-107X	TA E CAPACITOR	100uF 4V M	
C3705	NBE20GM-226X	TA E CAPACITOR	22uF 4V M	
C3706	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C3708	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C3709	NCB30JK-105X	C CAPACITOR	1uF 6.3V K	
C3710	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6001	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	

⚠ Symbol No.	Part No.	Part Name	Description	Local
C6004	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6005	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6006	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C6007	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C6008	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6009	NCB21CK-224X	C CAPACITOR	0.22uF 16V K	
C6010	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6011	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6012	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6101	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6102	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6103	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6104	NCBA1HK-681W	C CAPACITOR	680pF 50V K	
C6201	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6202	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6203	NCBA1HK-471W	C CAPACITOR	470pF 50V K	
C6204	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6301	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6302	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6303	NCBA1HK-471W	C CAPACITOR	470pF 50V K	
C6305	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6401	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6402	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6403	NCBA1HK-471W	C CAPACITOR	470pF 50V K	
C6405	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6501	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6502	NCF21CZ-105X	C CAPACITOR	1uF 16V Z	
C6503	NCB11EK-105X	C CAPACITOR	1uF 25V K	
C6504	NCB11CK-475X	C CAPACITOR	4.7uF 16V K	
C6505	NCF21CZ-105X	C CAPACITOR	1uF 16V Z	
C6506	NCB11EK-105X	C CAPACITOR	1uF 25V K	
C6507	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C6508	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6509	NCBA1AK-333W	C CAPACITOR	0.033uF 10V K	
C6510	NCBA1AK-473W	C CAPACITOR	0.047uF 10V K	
C6511	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6512	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6513	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6514	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6515	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6516	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6701	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6702	NCB11CK-475X	C CAPACITOR	4.7uF 16V K	
C6704	NCBA1EK-472W	C CAPACITOR	4700pF 25V K	
C6705	NCBA1CK-103W	C CAPACITOR	0.01uF 16V K	
C6706	NCBA1HK-221W	C CAPACITOR	220pF 50V K	
C6707	NCBA1HK-821W	C CAPACITOR	820pF 50V K	
C6708	NCB11CK-475X	C CAPACITOR	4.7uF 16V K	
C6709	NBE20JM-106X	TA E CAPACITOR	10uF 6.3V M	
C6710	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C6802	NCB10JK-106X	C CAPACITOR	10uF 6.3V K	
C6803	NCBA1HK-102W	C CAPACITOR	1000pF 50V K	
C6804	NCBA1HK-392W	C CAPACITOR	3900pF 50V K	
R1	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R2	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R3	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R4	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R5	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R7	NRSA6AJ-682W	MG RESISTOR	6.8kΩ 1/16W J	
R8	NRSA6AJ-223W	MG RESISTOR	22kΩ 1/16W J	
R9	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R10	NRSA6AJ-332W	MG RESISTOR	3.3kΩ 1/16W J	
R204	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
R205	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R206	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
R207	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R208	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R209	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R3701	NRSA6AD-680W	MG RESISTOR	68Ω 1/16W D	
R3702	NRSA6AD-680W	MG RESISTOR	68Ω 1/16W D	
R3703	NRSA6AD-680W	MG RESISTOR	68Ω 1/16W D	
R3704	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R3705	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R3706	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R3707	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6001	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
R6002	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6003	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6004	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6005	NRSA6AD-163W	MG RESISTOR	16kΩ 1/16W D	
R6007	NRSA6AD-473W	MG RESISTOR	47kΩ 1/16W D	
R6008	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6009	NRSA6AJ-564W	MG RESISTOR	560kΩ 1/16W J	
R6013	NRSA63J-514X	MG RESISTOR	510kΩ 1/16W J	
R6014	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R6015	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R6016	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6017	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6018	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6019	NRSA6AJ-222W	MG RESISTOR	2.2kΩ 1/16W J	
R6020	NRSA6AJ-184W	MG RESISTOR	180kΩ 1/16W J	
R6021	NRSA6AJ-474W	MG RESISTOR	470kΩ 1/16W J	
R6022	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6024	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6025	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6026	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R6030	NRSA6AJ-824W	MG RESISTOR	820kΩ 1/16W J	
R6031	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6101	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6102	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6103	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6104	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6105	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6109	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6111	NRSA6AD-473W	MG RESISTOR	47kΩ 1/16W D	
R6112	NRSA6AD-113W	MG RESISTOR	11kΩ 1/16W D	
R6201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6203	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6204	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6205	NRSA6AD-683W	MG RESISTOR	68kΩ 1/16W D	
R6206	NRSA6AD-363W	MG RESISTOR	36kΩ 1/16W D	
R6301	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6302	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6303	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6304	NRSA6AD-303W	MG RESISTOR	30kΩ 1/16W D	
R6305	NRSA6AD-133W	MG RESISTOR	13kΩ 1/16W D	
R6306	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R6307	NRSA6AJ-185W	MG RESISTOR	1.8MΩ 1/16W J	
R6308	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6313	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6401	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6402	NRSA6AD-123W	MG RESISTOR	12kΩ 1/16W D	
R6403	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6404	NRSA6AD-562W	MG RESISTOR	5.6kΩ 1/16W D	
R6405	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6406	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R6407	NRSA6AJ-185W	MG RESISTOR	1.8MΩ 1/16W J	
R6409	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
R6411	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6413	NRSA6AJ-185W	MG RESISTOR	1.8MΩ 1/16W J	
R6502	NRSA6AD-913W	MG RESISTOR	91kΩ 1/16W D	
R6503	NRSA6AD-104W	MG RESISTOR	100kΩ 1/16W D	
R6504	NRSA6AJ-103W	MG RESISTOR	10kΩ 1/16W J	
R6505	NRSA6AJ-333W	MG RESISTOR	33kΩ 1/16W J	
R6508	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6509	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6510	NRSA6AD-303W	MG RESISTOR	30kΩ 1/16W D	
R6511	NRSA6AD-243W	MG RESISTOR	24kΩ 1/16W D	
R6512	NRSA6AJ-473W	MG RESISTOR	47kΩ 1/16W J	
R6513	NRSA6AJ-272W	MG RESISTOR	2.7kΩ 1/16W J	
R6514	NRSA6AD-393W	MG RESISTOR	39kΩ 1/16W D	
R6515	NRSA6AD-363W	MG RESISTOR	36kΩ 1/16W D	
R6516	NRSA6AJ-273W	MG RESISTOR	27kΩ 1/16W J	
R6517	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6518	NRSA6AJ-104W	MG RESISTOR	100kΩ 1/16W J	
R6519	NRSA6AJ-823W	MG RESISTOR	82kΩ 1/16W J	
R6521	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6523	NRSA6AD-303W	MG RESISTOR	30kΩ 1/16W D	
R6524	NRSA6AD-393W	MG RESISTOR	39kΩ 1/16W D	
R6525	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6526	NRSA6AJ-273W	MG RESISTOR	27kΩ 1/16W J	
R6701	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6702	NRV142F-R20X	CMF RESISTOR	0.2Ω 1/4W F	
R6703	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R6704	NRSA6AJ-105W	MG RESISTOR	1MΩ 1/16W J	
R6705	NRSA02J-0R0X	MG RESISTOR	0Ω 1/10W J	
R6706	NRSA6AD-823W	MG RESISTOR	82kΩ 1/16W D	
R6707	NRSA6AD-333W	MG RESISTOR	33kΩ 1/16W D	
R6708	NRSA6AD-133W	MG RESISTOR	13kΩ 1/16W D	
R6709	NRSA6AD-104W	MG RESISTOR	100kΩ 1/16W D	
R6710	NRSA6AD-683W	MG RESISTOR	68kΩ 1/16W D	
R6712	NRSA6AJ-561W	MG RESISTOR	560Ω 1/16W J	
R6713	NRSA6AJ-224W	MG RESISTOR	220kΩ 1/16W J	
R6714	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R6715	NRSA6AD-472W	MG RESISTOR	4.7kΩ 1/16W D	
R6716	NRSA6AJ-822W	MG RESISTOR	8.2kΩ 1/16W J	
R6717	NRSA6AD-183W	MG RESISTOR	18kΩ 1/16W D	
R6718	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6719	NRSA6AJ-0R0W	MG RESISTOR	0Ω 1/16W J	
R6720	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R6802	NRSA6AJ-472W	MG RESISTOR	4.7kΩ 1/16W J	
R6803	NRSA6AJ-102W	MG RESISTOR	1kΩ 1/16W J	
L301	NQR0251-004X	FERRITE BEADS		
L302	NQR0251-004X	FERRITE BEADS		
L303	NQR0251-004X	FERRITE BEADS		
L304	NQR0251-004X	FERRITE BEADS		
L305	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L306	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L307	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L308	NQL38DK-100X	P COIL	10uH K	
L3701	NQL38DK-100X	P COIL	10uH K	
L6101	NQLC1EM-220X	COIL	22uH M	
L6201	NQLC1EM-220X	COIL	22uH M	
L6301	NQLC1EM-220X	COIL	22uH M	
L6401	NQLC1EM-220X	COIL	22uH M	
L6501	NQL76EM-121X	COIL	120uH M	
L6502	NQL38DK-100X	P COIL	10uH K	
L6701	NQLA1EN-150X	COIL	15uH N	
L6801	NQL79GM-470X	COIL	47uH M	
CN301	QGA1002C1-10X	CONNECTOR	ANA PWB-1 W-B (1-10)	
CN302	QGA0401F1-25W	CONNECTOR	ANA IPEX25 W-B (1-25)	
CN303	QGA0503F1-30X	CONNECTOR	ANA MXJ 30 W-B (1-30)	
CN304	QGF0543F1-12X	CONNECTOR	OPE-2 FFC/FPC (1-12)	
CN305	QGF0532F2-06X	CONNECTOR	OPE-3 FFC/FPC (1-6)	
CN306	QGA0503F1-30X	CONNECTOR	LCD MXJ 30 W-B (1-30)	
CN307	QGA1002C1-06X	CONNECTOR	BATT TERM W-B (1-6)	
CN308	QGA1002C1-11X	CONNECTOR	DIGI PWB W-B (1-11)	
CN309	QGA0503F1-20X	CONNECTOR	MXJ 20WIRE W-B (1-20)	
CN310	QGA1001C1-02X	CONNECTOR	CF SW W-B (1-2)	
⚠ F6001	NMFZ007-2R5X-K	FUSE	2.5A 24V	
⚠ F6002	NMFZ007-2R5X-K	FUSE	2.5A 24V	
⚠ F6301	NMFZ007-1R25X-K	FUSE	1.25A 32V	
⚠ F6501	NMFZ007-R80X-K	FUSE	0.8A 32V	
J301	QNZ0669-002	M CONNECTOR	MULTI	
J302	QNS0244-001	2.5 JACK	HP	
J303	QNA0039-001	DC JACK	1.5DC	
OT1	LY44955-001A	SPACER	DC JACK	
OT2	LY30034-0L8A	SPACER(A)	REG	

CCD BOARD ASSEMBLY <05>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10042-01B	CCD BOARD ASSY		
Q5502	2SC4082/P/-X	TRANSISTOR	CCD BUFF B	
Q5503	2SC4081/RS/-X	TRANSISTOR	VSUB CTL B	
Q5505	2SC4082/P/-X	TRANSISTOR	CCD BUFF R	
Q5506	2SC4081/RS/-X	TRANSISTOR	VSUB CTL R	
Q5508	2SC4082/P/-X	TRANSISTOR	CCD BUFF G	
Q5509	2SC4081/RS/-X	TRANSISTOR	VSUB CTL G	
C5503	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C5504	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C5505	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C5506	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C5509	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C5510	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	

MODEL	MARK	MODEL	MARK	MODEL	MARK
GZ-MC500EK	A	GZ-MC500EZ	D	GZ-MC500AG	G
GZ-MC500EX	B	GZ-MC500AA	E	GZ-MC500AH	H
GZ-MC500EY	C	GZ-MC500AC	F		

⚠ Symbol No.	Part No.	Part Name	Description	Local
C5511	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C5512	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C5515	NCB21CK-105X	C CAPACITOR	1uF 16V K	
C5516	NCB31EK-104X	C CAPACITOR	0.1uF 25V K	
C5517	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C5518	NCB21CK-105X	C CAPACITOR	1uF 16V K	
R5504	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5505	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R5506	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R5507	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5511	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5512	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R5513	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R5514	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5518	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5519	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J	
R5520	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J	
R5521	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R5522	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R5523	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R5524	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
CN5501	QGB0507L1-40X	CONNECTOR	TO CDS TG B-B (1-40)	
OT1	LY34957-003A	BUSTERAID(A)	BUSTER CCD(x2)	
OT2	LY34957-004A	BUSTERAID(A)	BUSTER TG	
OT3	LY30034-0U7A	SPACER(A)	(x3)	

CF BOARD ASSEMBLY <06>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10043-01A	CF BOARD ASSY		
C9901	NCBA1AK-104W	C CAPACITOR	0.1uF 10V K	
C9902	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
C9903	NBE20JM-476X	TA E CAPACITOR	47uF 6.3V M	
R9901	NAD0037-473X	N THERMISTOR	47kΩ	
R9903	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9904	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9905	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9906	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9907	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9908	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9909	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9910	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9911	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9912	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9913	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9914	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9915	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9916	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9917	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
R9918	NRSA6AJ-220W	MG RESISTOR	22Ω 1/16W J	
L9901	NQR0339-001X	FERRITE BEADS		
CN9901	QGA0401F1-25W	CONNECTOR	25IPEX W-B (1-25)	
CN9902	QGA0401F1-25W	CONNECTOR	25IPEX W-B (1-25)	
CN9903	NNZ0119-001	CF CARD CONNE	CF CN	
CN9904	QGA0503F1-20X	CONNECTOR	20MXJ W-B (1-20)	
BK1	LY21295-001A	FRAME		
BK2	LY34424-001A	BRACKET(A)		
BK3	LY34425-001A	BRACKET(B)		
CN1	NNZ0120-001	CF CARD CONNE	CF EJECT	
OT1	LY30031-056A	SPECIAL SCREW		
OT2	LY30031-056A	SPECIAL SCREW		
OT3	LY30031-0G6A	SPECIAL SCREW	BR(A)-SOCK	
OT4	LY30031-0G6A	SPECIAL SCREW	BR(B)-SOCK	
OT5	LY30031-0G6A	SPECIAL SCREW	FRM-SOCK(x2)	
OT6	LY30034-0E6A	SPACER(A)	(x2)	
OT7	LY30034-0E7A	SPACER(A)		
OT8	LY45006-001A	SPACER(1)		
OT9	LY45007-001A	SPACER(2)		
OT10	LY30034-0N7A	SPACER(A)	SENSOR	

⚠ Symbol No.	Part No.	Part Name	Description	Local
WR1	WJJ0498-001A-E	E-SI C WIRE C-C	REG20P	

LCD-SUB BOARD ASSEMBLY <07>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW1	LYA10044-01A1	LCD-SUB BOARD ASSY		
R7801	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
CN7801	QGF0532F2-24X	CONNECTOR	LCD PANEL FFC/FPC (1-24)	
CN7802	QGA0503F1-30X	CONNECTOR	30MXJ W-B (1-30)	

CF SW BOARD ASSEMBLY <09>

⚠ Symbol No.	Part No.	Part Name	Description	Local
PW2	LYA10044-01A2	CF SW BOARD ASSY		
SW1	NSW0241-001X	DETECT SWITCH		
WR1	WJA0043-001A-E	E-S ID WIRE	2PIN	